

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link-Up	)	WC Docket No. 03-109

**REPLY COMMENTS OF THE NEBRASKA RURAL INDEPENDENT COMPANIES**

Dated: May 23, 2011

The Nebraska Rural Independent Companies

Paul M. Schudel (NE Bar No. 13723)  
James A. Overcash (NE Bar No. 18627)  
Woods & Aitken LLP  
301 South 13th Street, Suite 500  
Lincoln, NE 68508  
(402) 437-8500

Thomas J. Moorman  
Woods & Aitken LLP  
2154 Wisconsin Ave. NW, Suite 200  
Washington, D.C. 20007  
(202) 944-9502  
Their Attorneys

## TABLE OF CONTENTS

SUMMARY OF COMMENTS .....	iv
I. INTRODUCTION. ....	1
II. THE NEBRASKA COMPANIES GENERALLY SUPPORT THE RECOMMENDATIONS SET FORTH IN THE COMMENTS OF THE STATE JOINT BOARD MEMBERS. ....	2
A. Taken As A Whole, The Comments Submitted By The State Joint Board Members Provide The Commission With Reasonable Guidelines For Actions To Attain The Principles Outlined In The <i>NPRM</i> .....	2
B. The Rate Of Return Level Established By The Commission Should Not Be Changed Unless Risk Circumstances Are Lessened. ....	7
C. The Nebraska Companies Support The State Joint Board Members’ Recommendation That The Commission Should Classify Interconnected VoIP Service As A Telecommunications Service.....	9
III. FEDERAL USF REFORMS SHOULD BE IMPLEMENTED IN A MANNER CONSISTENT WITH THAT PROPOSED BY THE NEBRASKA COMPANIES.....	11
A. Commenters Overwhelming Support Continuation Of Rate Of Return Regulation, And Thus, The Commission Should Focus On Implementing Appropriate Limitations. ....	11
1. Imposing Reasonable Limitations On ROR Regulated Companies’ Federal USF Support As Proposed By The Nebraska Companies Can Attain The Commission’s Broadband Principles While Preserving Universal Service.....	12
2. The Nebraska Companies Have Provided A Roadmap For Implementing Limitations On Capital And Operating Expenses. ....	13
B. The Commission Should Reject Claims That Ignore The Requirements Of Sections 214(e) And 254(e) Requiring That Only Telecommunications Carriers Designated As ETCs Are Eligible To Receive Federal USF.....	16

C.	Adopting Proposals That Will Institute A Procurement Auction Will Unlikely Achieve Universal Service Goals. ....	23
IV.	PROPOSALS TO DRASTICALLY REDUCE ICC AND RESTRICT RLECS FROM RECOVERING ICC REVENUES FROM THE CAF WILL HINDER, IF NOT ELIMINATE, BROADBAND DEPLOYMENT IN RURAL, HIGH-COST AREAS. ....	27
A.	Proposals To Drastically Reduce Or Eliminate ICC Will Reduce Expenses For The Large Carriers While Hindering The Deployment Of Broadband In High-Cost Areas. ....	28
B.	Proposals To Dramatically Reduce ICC And Restrict Revenue Recovery For Lost ICC Will Not Result In Ubiquitous Deployment Of Broadband. ....	32
C.	Efforts To Justify Preemption Of State Commission Authority Over Intrastate Exchange Access Rates, Terms And Conditions Should Be Rejected Outright. ....	33
V.	EFFORTS TO HAVE THE COMMISSION PLACE ITS IMPRIMATUR ON EFFORTS OF CARRIERS TO PLACE THEIR INTERCONNECTION TRANSPORT OBLIGATIONS UPON RURAL LOCAL EXCHANGE CARRIERS SHOULD BE REJECTED. ....	39
VI.	WIRELESS AND SATELLITE TECHNOLOGIES SHOULD NOT FORM THE BASIS FOR COMMISSION ADOPTION OF CAF AND FEDERAL USF PROPOSALS RELATING TO THE RLECS. ....	45
A.	CTIA’s Comments Are Predictably Biased In Favor Of Wireless Technologies And Cannot Form The Basis For Commission Adoption Of CTIA’s CAF Proposal Relating To The RLECs. ....	45
1.	The Consumer’s Broadband Experience In Rural Areas Will Be Greatly Diminished If The Commission Adopts CTIA’s Proposal To Limit CAF Funding To Areas Without Mobile Broadband Quality Coverage. ....	45
2.	CTIA’s Conclusions Are Based On A Distortion Of The Facts. ....	46
a.	Wireless Is Not The “Most Efficient” Solution As The CTIA Comments Imply. ....	50
b.	Wireless Is Not The “Most Cost Effective” Solution As CTIA’s Comments Claim. ....	52

c.	CTIA Comments Show Inherent Flaws With Wireless And Actually Make The Case That Wireline Networks Are Better Able To Meet Broadband Demand. ....	56
B.	Satellite-Based Broadband Is Not A Viable Alternative To Wireline Broadband. ....	57
VII.	CONCLUSION.....	64
	APPENDIX A.....	66

## SUMMARY OF COMMENTS

The Nebraska Rural Independent Companies (“Nebraska Companies”) submit these Reply Comments in the above-captioned proceeding. The Nebraska Companies generally support the comments of the State Members of the Federal State Joint Board on Universal Service (the “State Joint Board Members”). The State Joint Board Members contemplate reasonable policy positions and recommendations that will assist the Commission in attaining the four guiding principles identified by the Commission in the *NPRM* with respect to Universal Service Fund (“USF”) and intercarrier compensation (“ICC”). The Nebraska Companies are in agreement with the State Joint Board Members that state participation and cooperation is integral to achieving the nation’s universal service goals. As such, existing state Carrier of Last Resort policies are key in making the transition to provider-of-last-resort policies to achieve ubiquitous broadband service. Likewise, state commissions should continue their role in determining Eligible Telecommunications Carriers (“ETCs”) for federal USF and Connect America Fund (“CAF”) purposes. The Nebraska Companies demonstrate the fallacies associated with positions that ETCs are not required to be telecommunications carriers and that federal USF/CAF disbursements should be provided for non-telecommunications services. (For the reasons stated herein, the Nebraska Companies support the State Joint Board Members’ position that Voice over Internet Protocol should be classified as a telecommunications service.)

As part of the federal-state partnership with respect to ICC, the State Joint Board Members are correct that the Commission should approach ICC reforms cooperatively with state commissions, and not preemptively. The legal hurdles associated with Commission preemption of state commission jurisdiction cannot be overcome nor can the underlying factual assertions regarding inseparability and public policy assertions by the preemption proponents be substantiated. Further, the Nebraska Companies demonstrate that ICC revenues paid to rural

ILECs have not thwarted broadband deployment, and, in fact, just the opposite is true. Any proposal to drastically reduce ICC levels should be rejected. Use of a non-cost based rate, such as \$0.0007 or thereabouts, or bill keep approaches offered by the large carriers and wireless providers, will dramatically slow or eliminate the build-out, maintenance, and operations of broadband-capable networks in rural, high-cost areas.

The State Joint Board Members are also correct that for rural local exchange carriers (“RLECs”) the retention of some form of rate of return (“ROR”) regulation is essential to meet the Commission’s broadband goals. Imposing reasonable limitations on ROR regulated companies’ federal USF as proposed by the Nebraska Companies can attain the Commission’s broadband principles while preserving universal service.

The Nebraska Companies also share the concerns of the State Joint Board Members regarding the utilization of an auction mechanism to distribute federal USF and support their thorough analysis of the potential negative consequences likely to arise under a competitive bidding process for universal service support. The Nebraska Companies’ additional points on this topic further demonstrate why contentions by parties that auctions should be used is an inappropriate conclusion for RLECs. By the Commission’s focusing its effort on ensuring the realistic attainment of the principles of modernization, fiscal responsibility, and accountability in high-cost areas rather than on the use of auctions, the Commission will have the opportunity to move forward with meaningful policies that reflect the realities of providing broadband services.

Although not commenting on the specific inputs into the State Joint Board Members’ rate of return calculation (*i.e.*, cost of debt, cost of equity and capital structure) or the specific output of the State Joint Board Members’ calculations, if the *totality* of the State Joint Board Members’ recommendations were to be adopted by the Commission, it would appear that an ETC would have a reasonable expectation of continuing USF support and other revenue streams. *However,*

*in the event that any plan that might ultimately be approved by the Commission does not offer significant reductions in risk and variability on future cash flows or to the extent that the operations of the future fund are at all unclear, reductions in the current rate of return, especially of the magnitude as proposed by the State Joint Board Members, would be unwarranted.*

Efforts of carriers to place their interconnection transport obligations upon rural local exchange carriers should be rejected. Parties should not be permitted to distort the proper construction of the interconnection requirements of Section 251 and the Commission's interconnection rules.

Finally, the Nebraska Companies demonstrate that wireless and satellite technologies should not form the basis for Commission adoption of the CAF and federal USF. Specific rebuttal points to the factual contentions of wireless providers are provided in the attached paper titled, "Wireless Technology Cannot Deliver Broadband Services as Envisioned in the National Broadband Plan" that is incorporated herein by reference. Similar rebuttal of the factual contentions made by satellite providers is also provided. Ultimately, however, the facts and positions presented by the Nebraska Companies demonstrate that wireless and satellite services are not substitutes for wireline-based broadband services.

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link-Up	)	WC Docket No. 03-109
	)	
	)	

**REPLY COMMENTS OF THE NEBRASKA RURAL INDEPENDENT COMPANIES**

**I. INTRODUCTION.**

The Nebraska Rural Independent Companies (“Nebraska Companies”)<sup>1</sup> hereby submit these Reply Comments in the above-captioned proceeding.<sup>2</sup> The Nebraska Companies

---

<sup>1</sup> The Companies submitting these Reply Comments are: Arlington Telephone Company, The Blair Telephone Company, Cambridge Telephone Company, Clarks Telecommunications Co., Consolidated Telephone Company, Consolidated Telco, Inc., Consolidated Telecom, Inc., The Curtis Telephone Company, Eastern Nebraska Telephone Company, Great Plains Communications, Inc., Hamilton Telephone Company, Hartington Telecommunications Co., Inc., Hershey Cooperative Telephone Co., K. & M. Telephone Company, Inc., The Nebraska Central Telephone Company, Northeast Nebraska Telephone Company, Rock County Telephone Company, Stanton Telecom Inc., and Three River Telco.

<sup>2</sup> See, *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, *High-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Federal-*

appreciate the opportunity to file reply comments in response to the April 18, 2011 comments filed by other interested parties in these proceedings regarding the *NPRM*.

**II. THE NEBRASKA COMPANIES GENERALLY SUPPORT THE RECOMMENDATIONS SET FORTH IN THE COMMENTS OF THE STATE JOINT BOARD MEMBERS.**

**A. Taken As A Whole, The Comments Submitted By The State Joint Board Members Provide The Commission With Reasonable Guidelines For Actions To Attain The Principles Outlined In The *NPRM*.**

The Nebraska Companies commend the State Members of the Federal State Joint Board on Universal Service (the “State Joint Board Members”) for their thorough examination and detailed analysis of the issues contained in the *NPRM*, as reflected in their comments filed in this proceeding on May 2, 2011.<sup>3</sup> Overall, the Nebraska Companies respectfully submit that the Comments of State Joint Board Members contemplate reasonable policy positions and recommendations that will assist the Commission in attaining the four guiding principles identified by the Commission in the *NPRM*, namely, modernizing the Universal Service Fund (“USF”) and intercarrier compensation (“ICC”) for broadband; creating fiscal responsibility; requiring accountability; and implementing market-driven policies (the “Four Principles”).<sup>4</sup> With certain exceptions, the Nebraska Companies concur with the recommendations of the State Joint Board Members.

---

*State Joint Board on Universal Service*, CC Docket No. 96-45, *Lifeline and Link-Up*, WC Docket No. 03-109, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC 11-13 (rel. Feb. 9, 2011) (“*NPRM*”).

<sup>3</sup> Comments by State Members of the Federal State Joint Board on Universal Service, May 2, 2011 (“Comments of State Joint Board Members”). For the purposes of these Reply Comments, the Nebraska Companies will reference other parties’ comment submissions by referring to the party or parties’ name and referencing the applicable pages of the comment submissions. Similar references will be used for citations to comment submissions regarding Section XV of the *NPRM*.

<sup>4</sup> *NPRM* at para. 10.

Regarding the role of the states, the Nebraska Companies are in agreement with the State Joint Board Members that state participation and cooperation is integral to achieving the nation's universal service goals. The State Joint Board Members point out that carrier-of-last-resort ("COLR") policies for voice services were authored by the states and serve as the source of many other fiscal and regulatory policies that have been and will continue to be important to universal service.<sup>5</sup> The Nebraska Companies also agree with the State Joint Board Members that recognize that existing state COLR policies are key in making the transition to provider-of-last-resort ("POLR") policies to achieve ubiquitous broadband service.<sup>6</sup> The State Utility Commissions' unique local knowledge makes them irreplaceable as Congress' designees to determine Eligible Telecommunications Carriers ("ETCs") for federal universal service support.<sup>7</sup> The states must retain this role; the Commission is ill-equipped to address the magnitude of the uniquely local issues and demands that are now addressed by state commissions. In the interest of preserving and advancing the universal availability of voice and broadband services, the Nebraska Companies urge the Commission to continue to maintain an active partnership with the state commissions.

As part of this federal-state partnership, the Nebraska Companies strongly agree with the State Joint Board Members that the Commission should approach ICC reforms cooperatively with state commissions, and not preemptively.<sup>8</sup> The Nebraska Companies concur with the State Joint Board Members' analysis that the Commission lacks the legal authority to unilaterally

---

<sup>5</sup> Comments of State Joint Board Members at p. 13.

<sup>6</sup> *Id.* at p. 126.

<sup>7</sup> *Id.* at p. 14. *See also*, 47 U.S.C. § 214(e)(2).

<sup>8</sup> Comments of State Joint Board Members at p. 12.

mandate rate changes to intrastate telecommunications service rates.<sup>9</sup> A joint effort between state and federal governments to reform intrastate access is also the most expeditious way to implement changes in a reasonable time frame; preemption will result in years of litigation, wasting both valuable time and resources.<sup>10</sup> In their Section XV Comments, the Nebraska Companies provided an analysis illustrating the economic impact a zero or a near-zero ICC rate would have on rural carriers.<sup>11</sup> The Nebraska Companies join the State Joint Board Members opposing the implementation of an arbitrarily low (i.e., \$0.0007 or bill-and-keep) national uniform rate. The Nebraska Companies agree with the State Joint Board Members that prescribing zero rates for ICC would “greatly increase the burden on federal and State USFs . . . [,] force carriers either to find other revenue sources or to dramatically reduce their costs, which could jeopardize the capital resources needed to build broadband networks . . . [,] and would “inhibit sufficient investment.”<sup>12</sup> The Nebraska Companies have demonstrated that an artificially low ICC rate or a bill-and-keep regime would thwart rural investment. In contrast to the proposed ICC reforms in the *NPRM*, the Nebraska Companies believe that the State Joint Board Members’ long-term proposal for the Commission to work in conjunction with state commissions to develop cost-based, company-specific rates offered to all purchasers of network

---

<sup>9</sup> *Id.* at p. vii.

<sup>10</sup> The Nebraska Companies provide additional comments with respect to the states’ authority over intrastate access rates in Section IV of these Reply Comments together with additional discussion on intercarrier compensation reforms in that Section.

<sup>11</sup> *See*, Section XV Comments of the Nebraska Companies at p. 7. In 2009, the Nebraska Companies collectively recorded \$20,007,742 in interstate and intrastate access revenues. Implementing an ICC rate of \$0.0007 per minute would have reduced intrastate and interstate access revenue in 2009 by 99% to \$224,094.

<sup>12</sup> Comments of State Joint Board Members at p. 149.

access services at a single location is appropriate.<sup>13</sup> The Nebraska Companies respectfully suggest that this proposal appears to be a more prudent approach to ICC reform as the states' intrastate rate-making authority will not be preempted and ICC rates will reflect the actual costs of providing service in rural and high-costs areas.

Already operating in a state with an established state universal service fund ("SUSF"), the Nebraska Companies strongly support the recommendation of the State Joint Board Members that the Commission, in the interest of fiscal responsibility and the spirit of partnership as envisioned in the Act, should create incentives for states to share the financial burden of supporting universal service. Under the proposal of the State Joint Board Members, some matching support would be available for states that generate their own SUSFs.<sup>14</sup>

The State of Nebraska, one of the nation's early adopters of a SUSF program, commenced proceedings in 1997 to establish the Nebraska Universal Service Fund. As part of this process, Nebraska's telecommunications providers that qualify for support agreed to significant reductions in intrastate access rates and recovered a portion of the lost revenue through increased local retail rates to pre-determined benchmark rates. Nebraska consumers are also charged a SUSF surcharge on intrastate telecommunications services to support the fund.

The Nebraska Companies further agree with the State Joint Board Members that, for rural local exchange carriers ("RLECs"), the retention of some form of rate of return ("ROR") regulation is essential to meet the Commission's broadband goals. Recognizing that "areas with poor service tend to be served by large incumbent local exchange carriers ("ILECs") (or their

---

<sup>13</sup> *Id.* at p. 147.

<sup>14</sup> *Id.* at p. 11.

successors) that are subject to price cap regulation,”<sup>15</sup> the State Joint Board Members advocate the continuation of ROR regulation so that ETCs can maintain a “reasonable expectation of continued support”<sup>16</sup> in order to borrow the capital necessary to deploy and maintain broadband-capable network infrastructure. Similar to the State Joint Board Members’ recommendations, the Nebraska Companies believe that employing appropriate limitations will alleviate the Commission’s concerns regarding disbursement levels of federal USF to ROR regulated ETCs, while at the same time allowing an appropriate level of federal USF disbursement to be maintained.<sup>17</sup>

Lastly, the Nebraska Companies share the concerns of the State Joint Board Members regarding the utilization of an auction mechanism to distribute federal USF support.<sup>18</sup> The Comments of the State Joint Board Members provide a thorough analysis of the potential negative consequences likely to arise under a competitive bidding process for universal service support. For all of the reasons articulated in the Comments of the State Joint Board Members, the Nebraska Companies join the State Joint Board Members in opposing the use of auctions for universal service purposes and further discuss the problems associated with auctions in Section III.C of these Reply Comments.

---

<sup>15</sup> Comments of State Joint Board Members at p. 90. The Nebraska Companies note that price-cap companies selected this form of regulation.

<sup>16</sup> *Id.* at p. 37.

<sup>17</sup> *See*, Comments of the Nebraska Companies at pp. 16-24. In Section III.A of these Reply Comments, the Nebraska Companies provide further discussion concerning the merits of continuing ROR regulation.

<sup>18</sup> *See*, Comments of State Joint Board Members at pp. 78-93.

**B. The Rate Of Return Level Established By The Commission Should Not Be Changed Unless Risk Circumstances Are Lessened.**

The National Broadband Plan (“NBP”) proposed to limit support under the CAF to areas where no private sector business case exists to provide broadband and high-quality voice-grade service.<sup>19</sup> The State Joint Board Members’ recommendations adopt this overall strategy. The NBP defined the financial gap as the difference between a provider’s capitalized revenue expectation and its capital needs. The State Joint Board Members’ recommendations take a similar approach by adopting a total company view of both costs and revenues.<sup>20</sup> The State Joint Board Members’ recommendations consider costs and revenues associated with not only the supported carrier’s regulated voice operations, but also the costs and revenues from broadband operations (excluding video revenues and costs).<sup>21</sup> The State Joint Board Members propose that cost would cover all capital costs, including depreciation, a reasonable return on investment, and operating costs, including middle mile broadband transmission costs from the end user to the Internet backbone.

In calculating a reasonable return on investment, the State Joint Board Members recommend that the Commission propose a rule prescribing the rate of return, for universal service calculations, at 8.5%. The State Joint Board Members propose to reduce the current rate of return on the basis of lower debt cost that exists in the current market as compared to that which existed when the current rate of return was authorized by the Commission. The State Joint Board Members recommend using a pro forma capital structure in universal service calculations that assumes 50% of capital is equity. With the interest rate and capital structure

---

<sup>19</sup> *Id.* at p. 4.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at p. 34.

known, an overall rate of return of 8.5%, according to the State Joint Board Members, implies a return on equity of 12%.<sup>22</sup> The State Joint Board Members recognize that risk in the wireline industry is higher now than in the past.<sup>23</sup> In fact, risk today is unprecedented certainly when compared to most of the last half century. Although not commenting on the specific inputs into the State Joint Board Members' rate of return calculation (*i.e.*, cost of debt, cost of equity and capital structure) or the specific output of the State Joint Board Members' calculations, the Nebraska Companies recognize that a reduction in the cost of capital (rate of return) of this magnitude is only appropriate if comprehensive measures, such as those proposed by the State Joint Board Members, were to be approved by the Commission in their entirety and without modification. Thus, if the *totality* of the State Joint Board Members' recommendations were to be adopted by the Commission, it would appear that an ETC would have a reasonable expectation of continuing USF support and other revenue streams. Such event itself mitigates some of the financial risks that wireline carriers currently face. Only by adopting all aspects of the State Joint Board Members' proposal would there be a significant reduction in a rural ETC's risks and the variability of future ETC cash flows.

*However, in the event that any plan that might ultimately be approved by the Commission does not offer significant reductions in risk and variability on future cash flows or to the extent that the operations of the future fund are at all unclear, reductions in the current rate of return, especially of the magnitude as proposed by the State Joint Board Members, would be unwarranted.* The State Joint Board Members' recommendations, taken as whole, may very well provide the necessary degree of significant reductions in risk to ROR regulated carriers to justify

---

<sup>22</sup> *Id.* at p. 37.

<sup>23</sup> *Id.*

the reduction in the return component while also adding certainty to future ETC cash flows. Thus, any deviations from the State Joint Board Members' Plan that would change an ETC's risk profile would be cause for adjustments to the State Joint Board Member's proposed rate of return.

**C. The Nebraska Companies Support The State Joint Board Members' Recommendation That The Commission Should Classify Interconnected VoIP Service As A Telecommunications Service.**

In response to the Commission's request for comments as to whether interconnected VoIP service should be classified as a telecommunications service,<sup>24</sup> the response of the State Joint Board Members is "yes."<sup>25</sup> The Nebraska Companies concur and support the rationale for this conclusion as provided in the Comments of the State Joint Board Members.

The Nebraska Companies have advocated for equal treatment of all traffic terminating on the public switched telephone network ("PSTN"), regardless of the technology used.<sup>26</sup> In so doing, the Nebraska Companies noted the Commission's recognition that consumers increasingly view interconnected VoIP services as substitutes for traditional voice telephone services.<sup>27</sup> As the State Joint Board Members point out in their Comments, the Pennsylvania Public Utilities Commission has concluded that classification of interconnected VoIP is not crucial because states have resolved disputes involving VoIP traffic through treatment of VoIP traffic "as but one

---

<sup>24</sup> *NPRM* at para. 73.

<sup>25</sup> Comments of State Joint Board Members at p. 19.

<sup>26</sup> Section XV Comments of the Nebraska Companies at pp. 2-3; Section XV Reply Comments of the Nebraska Companies at pp. 2-6. One of the primary focus of the Section XV Comments was that the Commission should determine that VoIP-PSTN voice traffic is subject to the same intercarrier compensation payment obligations as traditional voice traffic.

<sup>27</sup> *NPRM* at para. 612.

species of a ‘telecommunications service’ that is properly subject to the bi-jurisdictional regulatory oversight of the States and the FCC.”<sup>28</sup> While the Nebraska Companies support the approach of the Pennsylvania PUC to this issue, the Nebraska Companies believe that the classification of interconnected VoIP services as telecommunications service is a logical and necessary next step in the series of decisions by the Commission that, as observed by the State Joint Board Members, have “already assigned many of the hall mark duties of telephone services [to interconnected VoIP].”<sup>29</sup>

To this end, the Public Utilities Commission of Ohio (“PUCO”), in affirming its support of the proposition that interconnected VoIP services should be classified as telecommunication services,<sup>30</sup> advocates for use of the following four-part test for determination as to whether a particular service constitutes telecommunications service: (1) the provider offers fee-based voice telephony to mass market, either stand-alone basis or bundled with other services, that is a functional substitute to local telephone service; (2) the service transmits information of the user’s choosing by originating or terminating calls over the PSTN; (3) the information is received without a net change in form or content; and (4) the NANP is used to route the call.<sup>31</sup> The Nebraska Companies submit that this is a reasonable set of factors that can be relied upon by the Commission to make this reclassification.

---

<sup>28</sup> Comments of the Pennsylvania Public Utility Commission at p. 6.

<sup>29</sup> Comments of State Joint Board Members at p. 20.

<sup>30</sup> Comments of the PUCO at p. 9.

<sup>31</sup> *Id.* at n. 26.

### **III. FEDERAL USF REFORMS SHOULD BE IMPLEMENTED IN A MANNER CONSISTENT WITH THAT PROPOSED BY THE NEBRASKA COMPANIES.**

#### **A. Commenters Overwhelming Support Continuation Of Rate Of Return Regulation, And Thus, The Commission Should Focus On Implementing Appropriate Limitations.**

The Nebraska Companies joined the large number of parties that submitted comments supporting continuation of ROR regulation both in near-term and longer-term reforms of the federal USF.<sup>32</sup> The record for supporting ROR regulation is so strong, and opposition thereto is so predictable and baseless<sup>33</sup> that the Commission should turn its attention immediately to implementation of those federal USF reforms for ROR regulated ETCs that will achieve the Four Principles identified by the Commission in the *NPRM*.

---

<sup>32</sup> See, Comments of the National Exchange Carrier Association, Inc.; National Telecommunications Cooperative Association; Organization for the Protection and Advancement of Small Telecommunications Companies; and Western Telecommunications Alliance (and Concurring Associations) (“Rural Associations Comments”) at p. 61; Comments of CoBank, ACB at pp. 5-7; Comments of National Association of Regulatory Utility Commissioners (“NARUC”) at p. 17; Comments of Nebraska Rural Independent Companies at p. 16; Comments of Independent Telephone and Telecommunications Alliance at p. 11; Comments of Rural Broadband Alliance at p. 19; Comments of Moss Adams at p. 16; Comments of Blooston Rural Carriers at pp. 23-24; Comments of California Public Utility Commission at p. 22; Comments of Kansas Corporation Commission at pp. 31-32; Comments of Missouri Small Telephone Companies Group at pp. 5-6; Comments of ICORE Companies at p. 25; Comments of John Staurulakis, Inc. at pp. 15-16; Comments of Hill Country Telephone Cooperative at p. 5; Comments of Alexicon Consulting at pp. 55-56; Comments of Fred Williamson & Associates, Inc. at p. 11; Comments of SureWest Communications at p. 14; Comments of Pine Telephone Systems, Inc. at p. 2; Comments of Cambridge Telephone Company at pp. iv-v; Comments of State Independent Telephone Association at p. 5; Comments of Rural Telephone Companies-Idaho at p. v; Comments of Rural Telephone Companies-Nevada at p. v; and Comments of Albion Telephone Company at p. v.

<sup>33</sup> See, Comments of AT&T at pp. 2-3, 9-10; CTIA Comments at p. 12; and Comments of Verizon and Verizon Wireless at p. 53.

**1. Imposing Reasonable Limitations On ROR Regulated Companies' Federal USF Support As Proposed By The Nebraska Companies Can Attain The Commission's Broadband Principles While Preserving Universal Service.**

With the latest addition to the *NPRM* record providing analysis of ROR companies' operating expenses,<sup>34</sup> the Nebraska Companies respectfully submit that the Commission has the necessary framework in the record to proceed with its reform principles while maintaining the long-standing benefits of ROR regulation. Specifically, the Commission has before it proposals that would address concerns regarding controlling capital and operating costs, limiting the pace of capital investment, distributing federal USF support among high-cost carriers in an effort to maximize consumer benefits and constraining support in some areas where more federal USF support is provided than necessary to achieve the goal of reasonably comparable services at rates that are affordable and reasonably comparable to those in urban areas.<sup>35</sup> The application of these reasonable limitations will also provide the desired incentives that will encourage companies to manage their costs with that federal USF framework.

Those proposals to modify the current federal USF program applicable to ROR companies include the following:

- Implementing limitations on ROR companies' capital expenditures for broadband deployment reimbursable through universal service by developing a mathematically supported upper limit on "reasonable" capital expenditures for fiber construction based on linear density and potentially other factors that are determined to be significant.<sup>36</sup>

---

<sup>34</sup> See, Nebraska Rural independent Companies' Operating Expenditure Study, Predicting the Operating Expenses of Rate-of-Return Telecommunications Companies, filed May 10, 2011 ("Operating Expense Study").

<sup>35</sup> *NPRM* at para. 162.

<sup>36</sup> *Id.* at paras. 201, 203.

- Limiting the pace by which ROR companies will be permitted to receive reimbursement for new loop plant based on the company's ratio of depreciation to gross plant.<sup>37</sup>
- Limiting the expenses reimbursable through universal service for ROR companies' operating expenses incurred to deploy and maintain broadband services by developing a mathematically supported upper limit on "reasonable" operating expenses for maintaining and operating a broadband network based on geographic area service and potentially other factors that are determined to be significant.<sup>38</sup>

Based on the Commission's premise that growth in the level of federal USF support should be limited, this trio of proposals along with the earnings test proposed by the Nebraska Companies in their initial comments<sup>39</sup> can be implemented to provide the Commission and Congress with assurances that ROR companies' federal USF support is being spent wisely while assuring rural customers have improved access to broadband services today and in the future.

## **2. The Nebraska Companies Have Provided A Roadmap For Implementing Limitations On Capital And Operating Expenses.**

While the Commission may wish to expand the data sets already in the record upon which the various limitations to the current ROR federal USF mechanisms would be based, the fundamental framework for implementing those mechanisms is in place. The Nebraska Companies have undertaken and filed results of a regression analysis based on the actual costs of hundreds of fiber-based projects built or planned by ROR companies in many states.<sup>40</sup> At the request of Commission Staff, the Nebraska Companies are attempting to expand the data set for that analysis to include companies in states not represented in the initial filing.

---

<sup>37</sup> See Appendix A, Rural Associations Comments, "Proposal for Allowed Loop Plant Capital Expenditures for High-Cost Funding of Future Loop Plant Investments," prepared by Vantage Point Solutions (April 18, 2011) ("Capex Pace Proposal").

<sup>38</sup> *Id.*

<sup>39</sup> See Comments of the Nebraska Companies at pp. 42-43.

<sup>40</sup> See Nebraska Rural Independent Companies' Capital Expenditure Study, Predicting the Cost of Fiber to the Premise, filed January 7, 2011 ("Capital Expenditure Study").

The Commission Staff has proposed to utilize this analysis to establish limitations on ROR companies' costs,<sup>41</sup> but posits whether a simpler formula, with fewer variables or even just one variable – density – would be preferable to a more complex formula with more variables.<sup>42</sup> The Nebraska Companies believe that the results of the filed capital expenditure study justify limiting the equation to one based solely on density, as the data show that linear density (or households per route mile) accounted for 82.5% of the variation in construction costs.<sup>43</sup> Such a strong regression result from a density-based equation suggests that it may not be worthwhile or necessary to search for further variables given the time and expense of doing so. The addition of other variables, such as households, frost index, wetlands percentage, soils texture, and road intersection frequency, only raised the r-squared of the equation to 0.8666.

The Nebraska Companies anticipate that the Commission will likely want to incorporate additional carriers' data from around the nation to produce a more representative data set upon which to establish a range of permissible capital expenditures for all areas of the nation served by ROR companies. Once this expanded regression study is completed, which represents the mean capital expenditures for a service area, an upper limit must be statistically derived based on the variance of the same. The Nebraska Companies submit that a simple percentage increase over the regression equation is not appropriate because it does not reflect the sample variance.<sup>44</sup> Such a cap could be too high or too low depending on the sample data.

---

<sup>41</sup> *NPRM* at para. 201.

<sup>42</sup> *Id.* at para. 206.

<sup>43</sup> *See Capital Expenditure Study* at p. 16.

<sup>44</sup> *NPRM* at para. 206.

The Nebraska Companies also recommend incorporation of the Capex Pace Proposal contained in the Rural Associations Comments.<sup>45</sup> That proposal reasonably limits the pace of a carrier's investment by providing a methodology to determine the maximum amount that a ROR company can invest in loop plant annually.<sup>46</sup> The Nebraska Companies respectfully submit that each of these limitations could be used to place an absolute ceiling on investment and the pace of investment to be supported by the federal USF, directly addressing the Commission's concerns with the level of federal USF available to ROR companies.

In addition, the Nebraska Companies propose that a regression analysis comparable to their Operating Expense Study could be utilized to limit operating expenses.<sup>47</sup> Under this proposal, operating expenses for each ROR company's study area would be eligible for federal USF recovery if those expenses fell below a cap developed by the Commission based on the approach developed in the Operating Expense Study.<sup>48</sup> This Study, based on actual data provided by more than 180 ROR companies in the Telergee accounting firms' benchmarking survey,<sup>49</sup> produced a regression analysis of these companies' operating expenses that explained

---

<sup>45</sup> See Capex Pace Proposal at pp. 5-8.

<sup>46</sup> The proposal focuses on local loop investment because loop plant represents a majority of ROR companies' investment, receives a significant portion of high-cost funding and entails different design variability.

<sup>47</sup> See generally, Operating Expense Study.

<sup>48</sup> In the *NPRM*, the Commission asks whether a cap of 110 percent of the estimated cost and investment provides a reasonable buffer for carriers that have higher costs for reasons not captured in the formula. While the Nebraska Companies support use of such a buffer, they believe the amount of such buffer should be determined in a statistically and economically valid manner, not by a randomly set cap.

<sup>49</sup> Telergee data was supplemented with information from 12 Nebraska companies and to improve geographic diversity 6 companies that were not included in the 2009 benchmark study were also added.

65.22 % of variation in operating expenses. While the Operating Expense Study represents a constructive start in analyzing ROR companies' expense levels, the Nebraska Companies recommend that the Commission undertake further efforts to obtain a more diverse sample and to achieve greater predictability of results by seeking a time series of data. Furthermore, rural companies' middle-mile expenses are not included in the Operating Expense Study, as such expenses were not included in the Telergee survey. Since middle-mile expenses represent an essential and growing part of companies' broadband costs, these middle-mile expenses ultimately need to be included in broadband expenses eligible for reimbursement from federal USF.

Finally, if the Commission moves forward with the federal USF limitations applicable to ROR companies as described herein, the Commission should also establish a waiver process for ROR companies with extraordinary circumstances that might require treatment for USF purposes other than that described in the above methodologies. Thus, with the combination of the federal USF limitation mechanisms and the establishment of a waiver process, the Nebraska Companies believe the Commission has before it in this *NPRM* record an attainable roadmap for accomplishing its USF goals for ROR companies.

**B. The Commission Should Reject Claims That Ignore The Requirements Of Sections 214(e) And 254(e) Requiring That Only Telecommunications Carriers Designated As ETCs Are Eligible To Receive Federal USF.**

Contrary to positions advocated by some commenting parties, the Commission cannot and should not provide federal USF disbursements to non-telecommunications carriers or to entities that have not been designated ETCs pursuant to Section 214 of the Act.<sup>50</sup> These parties'

---

<sup>50</sup> See 47 U.S.C. § 214(e)(1). For purposes of this discussion, the Nebraska Companies note that the terms "telecommunications carrier" as used in the Act is the same as the term "common carrier." See, e.g., *Virgin Islands Telephone Corporation v. FCC*, 198 F.3d 921, 926 (D.C. Cir.

positions cannot be reconciled with the fundamental tenet of Section 254 of the Act which requires that USF funding for networks must be made only to telecommunications carriers.<sup>51</sup>

After the date on which Commission regulations implementing this section take effect, *only an eligible telecommunications carrier* designated under section 214(e) of this title *shall be eligible* to receive specific Federal universal service support. A carrier that receives such support shall use that support only for the provision, maintenance, and upgrading of facilities and services for which the support is intended. Any such support should be explicit and sufficient to achieve the purposes of this section.<sup>52</sup>

Even if these legal prohibitions to providing non-telecommunications carriers/non-ETCs' federal universal service funding for broadband could be overcome (which they cannot), parties arguing that the Commission should ignore the directives of Sections 214(e) and 254(e) have also failed to demonstrate how any such proposal is consistent with the "accountability" objective that the Commission has indicated is one of its Four Principles cornerstones.<sup>53</sup>

In this regard, the Nebraska Companies respectfully submit that the accountability of telecommunications carriers that are ETCs *and* are common carriers subject to the Commission and/or state commission oversight is known and measureable.<sup>54</sup> Absent that status, there is no assurance that non-ETCs/non-telecommunications carriers could or would be subject to the same

---

1999); *see also National Association of Regulatory Utility Commissioners v. FCC*, 525 F.2d 630 (D.C. Cir. 1976) *cert denied*, 425 U.S. 992.

<sup>51</sup> *See* Rural Associations Comments at 81; Comments of the Rural Telecommunications Carriers Coalition ("RTCC Comments") at p. 3 (In modifying the federal USF or creating the CAF, the Commission cannot "ignore the requirements of Sections 214 and 254 of the Act. . . .") at pp. 9-10.

<sup>52</sup> 47 U.S.C. § 254(e) (emphasis added); *accord* Comments of the RTCC at pp. 3, 9-10.

<sup>53</sup> *See NPRM* at para. 10.

<sup>54</sup> The Nebraska Companies note that the terms "telecommunications carrier" as used in the Act is the same as the term "common carrier." *See, e.g., Virgin Islands Telephone Corporation v. FCC*, 198 F.3d 921, 926 (D.C. Cir. 1999); *see also National Association of Regulatory Utility Commissioners v. FCC*, 525 F.2d 630 (D.C. Cir. 1976) *cert denied*, 425 U.S. 992.

public interest requirements of serving all upon reasonable request, let alone not engage in unreasonable discrimination.<sup>55</sup> In addition, it is questionable whether the Commission would have sufficient enforcement authority over providers that are not ETCs. The Nebraska Companies note that running the risk of such non-accountability is even more acute when, as the Commission itself has indicated, federal USF dollars are scarce.<sup>56</sup>

Accordingly, it would be contrary to the Act's legal requirements, inconsistent with the Commission's stated objectives of universal service and otherwise imprudent to suggest that an entity that has failed to commit to the status and requirements of an ETC and a common carrier should be eligible to receive federal USF support. Suggestions to the contrary should be rejected.

For example, the assertion that a "qualified bidder" would be inhibited from participating in any form of universal service broadband program as suggested by the American Cable Association, Inc. ("ACA") is wholly misplaced.<sup>57</sup> Nothing precludes such an entity to submit itself to the jurisdiction of the state commission or the Commission and commit to conduct its broadband access service activities as a common carrier.<sup>58</sup> Understandably, by submitting itself

---

<sup>55</sup> See, e.g., 47 U.S.C. §§ 201, 202 and 214(e). The Nebraska Companies note that similar constructs are statutorily applied in Nebraska (*see generally*, Nebraska Telecommunications Regulation Act, *Neb. Rev. Stat.* §§ 86-101 to 86-163, 86-165 (Reissue 2008); Nebraska Telecommunications Universal Service Fund Act, *Neb. Rev. Stat.* §§ 86-316 to 86-329; specifically, §§ 86-323, 86-324 and 86-325 (Reissue 2008))), and anticipate that similar statutory constructs are present in other states.

<sup>56</sup> See, e.g., *NPRM* at para. 10.

<sup>57</sup> See ACA Comments at pp. iv and 26 (addressing "qualified bidders" initially in the context of reverse auctions but adding "and potentially other High-Cost funding sources to support the extension of broadband into unserved areas. . .").

<sup>58</sup> The Nebraska Companies note that the State Joint Board Members indicate that "[u]nder current FCC policy, a broadband Internet provider is not a 'common carrier.'" Comments of

to the common carrier jurisdiction of a state commission or the Commission, that act would also subject the entity to the requirements and obligations attendant to such status, that is, to provide service upon reasonable request and not to engage in unreasonable discrimination. And, that is the key – common carrier and ETC status fosters accountability that is required when scarce federal USF resources are in play and that is consistent with the Commission’s Four Principles.<sup>59</sup>

While the logical outgrowth of ACA’s position appears to be an effort to avoid state commission jurisdiction and oversight, such a result should be rejected. As the State Joint Board Members indicated in the context of COLR obligations, “[s]tate commissions are still the bodies most aware of local conditions in communications and still have the greatest motivation to ensure that telecommunications service is universally available and of good quality.”<sup>60</sup> Moreover, the implicit contention that state commissions should not have a continuing role in universal availability of broadband cannot be reconciled with the Commission’s stated objective of encouraging the existing federal/state partnership in universal service.<sup>61</sup>

In addition to the contentions made by ACA, it is remarkable that, in light of the requirements of Sections 214 and 254 of the Act, Time Warner Cable, Inc. (“TWC”) can, in

---

State Joint Board Members at p. 142. While this statement is correct where an entity combines the broadband transmission/transport capabilities of a common carrier with the actual provision of a service that enables the interaction with the Internet (which would be an entity such as that which is typically called an “Information Service Provider”), that fact does not and should not be confused with the provision of the underlying *common carrier* transport service – the common carrier broadband pipe – where federal USF is being provided to help in the recovery of the cost for that broadband pipe.

<sup>59</sup> Comcast Corporation (“Comcast”) requests that the Commission adopt policies that would “encourage the participation of all industry segments.” Comments of Comcast at p. 17 (footnote omitted). To the extent this expression of participation does not also include the requirement that entities by ETCs and common carriers/telecommunications carriers, then Comcast’s position should be rejected for the same reasons applicable to ACA and TWC.

<sup>60</sup> Comments of the State Joint Board Members at p. 137.

good faith, assert that the Commission should “shed outdated practices and assumptions that violate concepts of competitive and technological neutrality” and therefore “should not base funding eligibility on ETC status” because seeking such status allegedly “disproportionately favors incumbent LECs.”<sup>62</sup> TWC’s claims regarding an “extraordinary amount of time and resources involved” and some form of “systematic biases in favor of incumbent LECs” in seeking ETC status<sup>63</sup> is belied by the number of competitive ETCs that are in existence today. Moreover, while it is true that Section 214(e)(5) presumes that, for an incumbent RLEC that the service area should be its study area,<sup>64</sup> modification of that area is also available upon a proper showing.<sup>65</sup>

Ironically, TWC states that the “accountability” under its proposal is the same as that required of ETCs – serve the entire area applied for; advertise the availability of service; and propose a plan for coverage and service quality.<sup>66</sup> The Nebraska Companies note, however, that missing from TWC’s proposal is the accountability associated with that entity being a common carrier and thus subject to state commission oversight to enforce and oversee service obligations

---

<sup>61</sup> See, e.g., *NPRM* at paras. 84-85.

<sup>62</sup> Comments of TWC at p. ii; see also *id.* at p. 22.

<sup>63</sup> *Id.*

<sup>64</sup> Comments of TWC at p. 23; see also 47 U.S.C. § 214(e)(5) states that:

The term “service area” means a geographic area established by a State commission (or the Commission under paragraph (6)) for the purpose of determining universal service obligations and support mechanisms. In the case of an area served by a rural telephone company, “service area” means such company’s “study area” unless and until the Commission and the States, after taking into account recommendations of a Federal-State Joint Board instituted under Section 410(c) of this title, establish a different definition of service area for such company.

<sup>65</sup> The Commission has implemented this possibility in its rules. See 47 C.F.R. § 54.207.

or in such cases in which state jurisdiction is lacking, the oversight of the Commission. TWC's position is simply another attempt to ignore the proper role of state commissions in the universal service/ETC process. TWC's positions, therefore, should be rejected as contrary to the law and rational public policy.

The Nebraska Companies note that T-Mobile USA, Inc. ("T-Mobile") does not mirror the same positions as other parties such as ACA and TWC. T-Mobile supports the application of Section 214 ETC obligations.<sup>67</sup> Nonetheless, T-Mobile suggests that the Commission should not allow state commissions to complement the ETC requirements with state COLR obligations. While T-Mobile suggests that a complementary use of state COLR requirements is a "step in the wrong direction,"<sup>68</sup> the opposite is true. Allowing states to use their own COLR requirements ensures that any federal USF support associated with the provision of service, as well as support derived from any SUSF, is provided *only* to those entities committed to delivery of broadband service to consumers. As the State Joint Board Members have demonstrated, the fact is that the Commission has begun to migrate its policies regarding competitive ETCs towards policies more in line with state COLR requirements.<sup>69</sup> Accordingly, T-Mobile's contention would undermine "accountability," the very notion that the Commission seeks to establish.<sup>70</sup>

Finally, contrary to this structure of the Act that requires federal USF to be available *only* to telecommunications carriers that are ETCs, certain of the commenting parties suggest that the

---

<sup>66</sup> *See id.* at pp. 27-28.

<sup>67</sup> *See* Comments of T-Mobile USA, Inc. at p. 7.

<sup>68</sup> *See id.* A similar contention was made by CTIA. *See* CTIA Comments at pp. 31-32. For the same reasons stated herein, CTIA's position should also be rejected.

<sup>69</sup> Comments of the State Joint Board Members at pp. 128-129.

<sup>70</sup> *See NPRM* at para. 10.

Commission's forbearance authority under 47 U.S.C. § 160 includes the power to completely rewrite the Act to allow entities other than ETCs to receive federal USF disbursements.<sup>71</sup>

Forbearance authority is designed to allow the Commission to waive or forbear from enforcing various requirements and obligations of the Act with respect to a telecommunications carrier or telecommunications service or classes thereof. However, the Commission's forbearance authority cannot be construed to write out of the Act Congress' explicit requirements that underlie Section 214(e) and Section 254. ETC's must be telecommunications carriers and universal service funding must be provided to ETCs with respect to the telecommunications services covered by the definition of "universal service."<sup>72</sup> Congress explicitly acknowledged that Sections 214(e) and 254(e) are fundamental elements of the USF program to be provided only by ETCs.<sup>73</sup> Where exceptions exist allowing carriers not designated as ETCs to obtain

---

<sup>71</sup> See, e.g., Comments of AT&T at pp. 116-17; Comments of Time Warner Cable Inc. at p. 23. AT&T cites *Ad Hoc Telecomms. Users Comm. V. FCC*, 572 F.3d 903, 907 (D.C. Cir. 2009) in support of its argument that forbearance is the proper tool to provide access to broadband services. Comments of AT&T at 117. However, the *Ad Hoc* case involved the Commission's forbearance of dominant-carrier pricing regulation with respect to certain ILEC special access lines, while still maintaining Title II common-carrier regulation on those lines. *Ad Hoc*, 572 F.3d at 909. In *Ad Hoc* the Court addressed the Commission's waiver of a requirement on an already eligible carrier and not the waiver of the ILEC's status as telecommunications carrier altogether.

<sup>72</sup> See e.g. *In re i-wireless, LLC Petition for Forbearance from 47 U.S.C. § 214(e)(1)(A)*, Order, 25 F.C.C.R. 8784 (2010). In *i-wireless*, the Commission used its authority under Section 160 to forbear from applying the substantive requirements of Section 214 regarding the facilities requirement of Section 214(e) to allow a prepaid wireless resale provider to seek designation as an ETC and to offer services through the universal service Lifeline program. The Commission, using a measured approach, conditioned forbearance on a number of factors meant to "protect the universal service fund against waste, fraud and abuse." *Id.* at 8784. In the same matter the Commission denied forbearance to the provider for the purpose of utilizing the Link Up program because the provider failed to meet the burden of proof for each of the required statutory elements of forbearance. *Id.* at 8791-92.

<sup>73</sup> See S. REP. NO. 104-230, at 131 (1996) (Conf. Rep.) ("In keeping with the conferees' intent that all universal service support should be clearly identified, this subsection states that such

limited USF support, such exceptions are provided specifically by statute, not through forbearance.<sup>74</sup>

Thus, the Nebraska Companies respectfully submit that forbearing from the requirements of the Act to the extent proposed by commenting parties would be an end run around the Congressionally-mandated structure of the Act and the status of the entities which are entitled to seek USF support. Parties suggesting this result have not demonstrated that forbearance allows such a fundamental re-write of the Act and thus their positions should be rejected.

**C. Adopting Proposals That Will Institute A Procurement Auction Will Unlikely Achieve Universal Service Goals.**

The record reflects that there is scant empirical evidence on which to determine the feasibility or desirability of reverse or procurement auctions relative to alternative methods of providing universal service.<sup>75</sup> Nonetheless, Verizon proposes that the Commission should use a competitive bidding process in both the short-term and long-term phases of the CAF to distribute broadband support for areas that are unserved today or that would not be served without CAF monies.<sup>76</sup> Verizon's position should be rejected.

As noted above in Section II, the Nebraska Companies share the many concerns of the State Joint Board Members regarding any proposal to adopt a competitive bidding process or procurement or reverse auctions for distributing CAF in unserved areas, and do not support

---

support should be made explicit and should be sufficient to achieve the purposes of new section 254. The conferees intend that only eligible telecommunications carriers should receive support from specific Federal universal service support mechanisms[.]”).

<sup>74</sup> See 47 U.S.C. § 254(h)(1)(A) and (B)(ii) (providing that ETC status is not necessary for participation in school and library or rural health care universal service programs).

<sup>75</sup> Attachment to NTCA Comments, WC Docket No. 05-337, October 10, 2006, The Use of Reverse Auctions for Provision of Universal Service, Dale E. Lehman, (The Lehman Paper) at p. 1.

<sup>76</sup> Comments of Verizon and Verizon Wireless at p. 5.

proceeding any further with universal service auctions.<sup>77</sup> The Nebraska Companies agree with the State Joint Board Members that it is possible to manipulate any auction by structuring the rules in a way that eliminates ILECs' eligibility, with that likelihood increased if bidders are allowed to aggregate service areas.<sup>78</sup> Thus, the State Joint Board Members are correct when they conclude that if an auction area does not happen to coincide with an ILEC's territory, the ILEC has almost no chance of offering a successful bid.<sup>79</sup> In addition, procurement auctions will favor the largest carriers (with greater ability to spread costs) and disadvantage smaller providers and new entrants.<sup>80</sup> Large area auctions would also appear to favor larger carriers, or would require smaller carriers to bid jointly in order to compete.<sup>81</sup> The bidder-designated service area proposal will allow large carriers to aggregate census blocks in virtually any manner that would maximize large carriers' already considerable auction advantages.<sup>82</sup> Put simply, the proposed "ranking bids by price per unit covered" mechanism appears to ensure that AT&T, Verizon, and other large national carriers will receive virtually all the initial CAF support if this auction method is used.<sup>83</sup>

---

<sup>77</sup> Comments of the State Joint Board Members at p. 78.

<sup>78</sup> *Id.* at p. 79.

<sup>79</sup> *Id.*

<sup>80</sup> In the Matter of Connect American Fund, WC Docket No. 10-90, A National Broadband Plan for Our Future, GN Docket No. 09-51, High-Cost Universal Service Support, WC Docket No. 05-337, Joint Comments of the Nebraska Public Service Commission and the North Dakota Commission, July 12, 2010, at p. 10.

<sup>81</sup> The Lehman Paper at p. 7.

<sup>82</sup> Comments of the State Joint Board Members at p. 87.

<sup>83</sup> *Id.*

The Nebraska Companies note that a fundamental principle for an auction to be efficient is that all bidders are eligible to bid on the item being auctioned. In practical terms, this principle means the coverage area must be the same for all COLR bidders.<sup>84</sup> The Nebraska Companies therefore strongly endorse the position of the State Joint Board Members that if the Commission does pursue auctions, the Commission must not allow auction bidders to define their own service areas, but should consider imposing a restriction requiring bidders to serve at least the minimum existing service area of an existing ETC.<sup>85</sup>

The Nebraska Companies further agree with the position of the State Joint Board Members that reverse or procurement auctions work best when all bidders are approximately the same size, when there exists a semblance of a level playing field across a range of bidder sizes and bidder technologies, and the opportunity for gaming is limited.<sup>86</sup> The auction methodology proposed in the *NPRM* seems unlikely to achieve these conditions.<sup>87</sup>

The State Joint Board Members also assert that the auction proposal creates a risk of declining service quality.<sup>88</sup> The Nebraska Companies agree.

Once an auction winner receives its construction grant, there may be little incentive to ensure long-term service quality.<sup>89</sup> The State Joint Board Members have observed that large ILECs that are subject to price cap regulation and whose universal service support is based on

---

<sup>84</sup> The Lehman Paper at pp.5-6.

<sup>85</sup> Comments of the State Joint Board Members at p. 79.

<sup>86</sup> *Id.* at p. 82.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.* at p. 89.

<sup>89</sup> *Id.* at p. 90.

model costs rather than embedded costs have deferred maintenance expense and have cut staff at customer service centers.<sup>90</sup> Utilization of a procurement auction process is likely to create a “race to the bottom” where only the bid price is considered and the maximization of broadband coverage and quality of service issues will fall by the wayside.<sup>91</sup> In addition, in an attempt to win an auction and receive some high-cost support, rather than none at all, bidders may be motivated to submit bids that are far lower than what is actually needed to provide sustainable, affordable services for the long-term.<sup>92</sup> As the Rural Associations properly observed, auctions will cause service quality problems and inhibit network investment, and may leave rural areas without suitable COLRs.<sup>93</sup>

In light of the record before the Commission, the Nebraska Companies respectfully submit that procurement or reverse auctions are inappropriate for distributing broadband support to unserved portions of rural America. The Commission has left too many important questions unanswered relating to auctions. The auction process for distribution of universal service remains theoretical and untested. The record that has been established provides ample basis for the Commission to conclude that those areas or markets served by RLECs cannot sustain the use of auctions for CAF recovery. As such, the Nebraska Companies respectfully suggest that the Commission’s focus should instead be placed on ensuring the realistic attainment of the principles of modernization, fiscal responsibility and accountability in these areas. Such focus,

---

<sup>90</sup> *Id.*

<sup>91</sup> In the Matter of Connect American Fund, WC Docket No. 10-90, A National Broadband Plan for Our Future, GN Docket No. 09-51, High-Cost Universal Service Support, WC Docket No. 05-337, Reply Comments of the Nebraska Rural Independent Companies, August 11, 2010, at p. 10.

<sup>92</sup> Rural Associations Comments at pp. 76-77.

<sup>93</sup> *Id.* at pp. 76-78.

in turn, will afford the Commission the opportunity to move forward with meaningful policies that reflect the realities of providing broadband services in these areas, rather than to expend resources on a disaster caused by auctions.

**IV. PROPOSALS TO DRASTICALLY REDUCE ICC AND RESTRICT RLECS FROM RECOVERING ICC REVENUES FROM THE CAF WILL HINDER, IF NOT ELIMINATE, BROADBAND DEPLOYMENT IN RURAL, HIGH-COST AREAS.**

Proposals to drastically reduce or eliminate ICC revenues paid to RLECs, such as proposals to limit amounts RLECs can receive in the form of revenue recovery from the CAF and limit RLEC CAF funding to areas where there is no wireless coverage, will not only hinder broadband deployment in rural areas, but will most likely dramatically reduce RLECs' cash flows, and all but eliminate any hope of universal broadband deployment. Thus, such proposals should be rejected.

At the same time advocating for a drastic reduction in RLECs' cash flows, the large carriers and wireless providers' proposals would increase their own cash flows through reduced ICC payments and increased USF through procurement auctions, and allow them to redefine broadband to meet the limitations of wireless broadband while dramatically reducing service obligations through Commission preemption of states' rights to retain COLR obligations. These results too should be rejected.

The Nebraska Companies respectfully submit that the assertion that the "current system" is hindering progress to all IP networks in high-cost areas<sup>94</sup> is baseless. The large carriers and wireless providers simply attempt to induce the Commission to adopt proposals that ultimately

---

<sup>94</sup> AT&T claims that the Commission's existing policies are *hindering* broadband investment and adoption in high-cost areas, denying millions of Americans the benefits of next-generation technology.

lead to their sole financial gain. To the contrary, the Commission acknowledges the progress that has been made deploying broadband in rural areas under ROR regulation.<sup>95</sup>

**A. Proposals To Drastically Reduce Or Eliminate ICC Will Reduce Expenses For The Large Carriers While Hindering The Deployment Of Broadband In High-Cost Areas.**

AT&T and Verizon contend that the Commission's current ICC policies are hindering broadband deployment, especially in the rural, high-cost areas of the nation, and that current ICC systems must change to accommodate the transition to IP-based networks.<sup>96</sup> In order to spur the deployment of broadband in rural areas, large carriers and wireless providers urge the Commission to drastically reduce or to eliminate ICC. While CTIA suggests that it supports the notion that a rational ICC regime is crucial to creating appropriate incentives for providers to invest in infrastructure, deploy broadband networks, and make innovative services available to all Americans,<sup>97</sup> CTIA proposes an ICC regime that will prevent RLECs from investing in rural areas. CTIA's effort to have the Commission immediately adopt a proxy rate of \$0.0007 per minute of use should be rejected,<sup>98</sup> as should CTIA's effort to have the Commission adopt this low proxy rate as a step toward bill-and-keep.<sup>99</sup> CTIA's proposals fail to recognize the higher costs of providing service in rural areas as well as the success of current ICC rate levels in producing the revenues necessary to encourage broadband deployment by RLECs.

---

<sup>95</sup> See *NPRM* at para. 170.

<sup>96</sup> Comments of Verizon and Verizon Wireless at pp. 1-2.

<sup>97</sup> CTIA Comments at pp. 34-35.

<sup>98</sup> *Id.* at p. 37.

<sup>99</sup> Comments of Verizon and Verizon Wireless at p. 3.

Not surprising, Verizon's proposal is consistent with CTIA's approach. Without providing any support for the cost differences between its operations and those carriers providing exchange access in predominately high-cost, rural areas or the revenue impacts of its proposal on the carriers serving those areas, Verizon proposes that the Commission should begin rapidly transitioning all ICC rates to a "VoIP rate" – a default rate of \$0.0007 for all carriers and all traffic. This course of action presumes the existence of a "VoIP Rate" which has not been established by the Commission. Again, without considering any differences in the cost characteristics of carriers, Verizon believes that all rates should transition to this rate over three years and should apply to all carriers.<sup>100</sup> AT&T, in turn, proposes that the Commission establish a framework under which originating and terminating access charges (both interstate and intrastate) would be unified and then phased down in equal steps over a period of years until all rates are reduced to \$0.0007 beginning on January 1, 2016.<sup>101</sup> AT&T further proposes that effective January 1, 2017, access rates will be fully detariffed and all government-mandated intercarrier compensation obligations will be eliminated (*i.e.*, the default rule for intercarrier compensation on the PSTN will be bill-and-keep).<sup>102</sup>

Each of these proposals should be rejected. As the Nebraska Companies clearly demonstrated in their Section XV Comments and Section XV Reply Comments, the Commission lacks authority to establish a default/proxy rate that CTIA, Verizon, and AT&T all urge the Commission to adopt.<sup>103</sup> For this reason alone, these parties' suggestions should be rejected.

---

<sup>100</sup> *Id.*

<sup>101</sup> Comments of AT&T at p. 31.

<sup>102</sup> *Id.*

<sup>103</sup> Section XV Reply Comments of the Nebraska Rural Independent Companies at pp. 11-13.

Additionally, the Nebraska Companies submit that Verizon's efforts to circumvent applicable legal precedent should also be rejected. Specifically, even though the Commission does not have jurisdiction under Section 252 to set ILECs' intrastate pricing, Verizon nonetheless claims that the Commission could still adopt a "methodology" that caps those rate at \$0.0007 per minute and instruct ILECs (like all other carriers and providers) to look to their customers to recover any additional compensation for the service provided.<sup>104</sup> Such a "methodology" is merely a word game. Capping the ICC rate at a non-cost-based rate of \$.0007 per minute amounts to rate setting as Verizon effectively admits.<sup>105</sup> Thus, the Nebraska Companies urge the Commission to adopt a reasonable and measured approach to ICC reform that will ensure the continuation of broadband deployment in rural, high-cost areas.

Absent such a reasonable and measured approach such as that advocated by the Nebraska Companies, reducing rural ILEC ICC charges to such a low, non-cost-based rate level as proposed by the largest carriers and wireless providers will dramatically slow or eliminate the build-out, maintenance, and operations of broadband-capable networks in rural, high-cost areas. Further, as recognized by the State Joint Board Members, eliminating or greatly reducing rates for ICC would greatly increase the burden on federal and SUSFs.<sup>106</sup> ICC charges, and in particular, exchange access charges, provide a key revenue source that has helped ROR regulated companies fund the migration to networks that are capable of supporting both voice and

---

<sup>104</sup> Comments of Verizon and Verizon Wireless at p. 44.

<sup>105</sup> Id. at p. 46.

<sup>106</sup> Comments of State Joint Board Members at p. 149.

broadband, the very network that other service providers, including long distance, wireless, and VoIP providers use to provision their services.<sup>107</sup>

Switched access and reciprocal compensation revenues are integral components of the revenue recovery generated to afford RLECs the opportunity for recovery of network costs to serve the nation's most rural and highest cost areas. Any action to eliminate a substantial portion or all of these revenues raises significant universal service challenges for carriers such as the Nebraska Companies.<sup>108</sup> Dramatically reducing or eliminating the per-minute ICC system as proposed by the large carriers and wireless carriers will not propel the nation toward expanded broadband service availability in rural areas. Rather, it would have the opposite effect.

The Commission's experience with federal USF mechanisms confirms that the costs in rural areas are much higher than in urban and suburban areas. Such experience is reflected in the *NRPM* through the acknowledgement that density is the primary driver of network costs.<sup>109</sup> The Nebraska Companies respectfully suggest that the Commission focus on this fact and experience as it works toward establishment of a reasonable ICC policy and viable and fair cost recovery to offset ICC reductions. Through this effort, the Commission will be able to develop a plan that will allow broadband deployment in rural areas to continue.<sup>110</sup> In so doing, the Commission should not allow large ILECs, large interexchange carriers and large wireless carriers to persuade

---

<sup>107</sup> Comments of Nebraska Rural Independent Companies at p. 25.

<sup>108</sup> *Id.* at p. 27.

<sup>109</sup> *See, NPRM* at para. 203.

<sup>110</sup> Comments of Nebraska Rural Independent Companies at p. 28.

it to discontinue switched access service under the guise that the ICC system is a cost drag on the development of IP-based networks and thwarts broadband deployment in unserved areas.<sup>111</sup>

**B. Proposals To Dramatically Reduce ICC And Restrict Revenue Recovery For Lost ICC Will Not Result In Ubiquitous Deployment Of Broadband.**

CTIA asserts that universal service funding may not be used for access revenue replacement unless the revenue is specifically found to be necessary to preserve and advance universal service.<sup>112</sup> According to CTIA, recovery should only be allowed when an ILEC can show that it will not be able to charge affordable rates without it.<sup>113</sup> But as indicated by the data collected and analyzed by the National Exchange Carrier Association, Inc. (“NECA”) and reported in Comments of the State Joint Board Members, it will not be uncommon for carriers to demonstrate that they will not be able to charge affordable rates without a cost recovery mechanism. As noted by the State Joint Board Members, NECA, for example, reported that if all access rates were reduced to bill-and-keep (essentially the same for RLEC as \$0.0007 per minute),<sup>114</sup> the national weighted mean effect on local rates would be a rate increase of \$16.47.<sup>115</sup>

The Nebraska Companies agree with CoBank that unless there is a sufficient and sustainable cost recovery mechanism, no financing method will sustain a rural broadband network in the long term.<sup>116</sup> CoBank also properly notes the fact that, while the existing cost

---

<sup>111</sup> *Id.* at p. 32.

<sup>112</sup> CTIA Comments at p. 43.

<sup>113</sup> *Id.* at p. 44.

<sup>114</sup> The Nebraska Companies have previously demonstrated that reducing their intrastate and interstate switched rates to \$0.0007, eliminates 99% of their total switched access revenue. *See*, Section XV Comments of the Nebraska Companies at p. 7.

<sup>115</sup> Comments of State Joint Board Members at p. 104.

<sup>116</sup> Comments of CoBank, ACB at p. 4.

recovery mechanisms need revision to support broadband, the existing cost recovery mechanisms have been successful in enabling many of CoBank's rural communications customers to successfully deploy broadband to rural areas. The Commission has recognized that access revenues are a large proportion of revenues, especially for RLECs. Without such revenues it is doubtful that many RLECs will have sufficient cash flows to fund broadband projects. Thus, access revenue replacement is vital for the preservation and advancement of universal availability of broadband service.

Therefore, in order to ensure ubiquitous broadband deployment, the Nebraska Companies respectfully submit that it would be imprudent public policy to adopt proposals to eliminate ICC charges while not providing for a cost recovery mechanism to address the cost recovery/revenue shortfall that would arise.<sup>117</sup>

**C. Efforts To Justify Preemption Of State Commission Authority Over Intrastate Exchange Access Rates, Terms And Conditions Should Be Rejected Outright.**

The Nebraska Companies note that the issue regarding the Commission's ability to preempt state commission jurisdiction over intrastate exchange access charges is, as expected, hotly contested. However, if such matters were as "clear,"<sup>118</sup> as some of the parties seeking preemption of state commission authority would have the Commission believe, the debate would have been resolved far earlier than the issuance of the *NPRM*. At the same time, the Nebraska Companies also note that the thorniness of any such analysis and conclusions that would be

---

<sup>117</sup> Verizon proposes that revenue recovery should sunset after three years. *See*, Comments of Verizon and Verizon Wireless at p. 21. Verizon has not shown, nor could it, that the recovery reflected by the ICC revenue will disappear in the three years, nor that Congress' USF policies are limited by some arbitrary time period such as that offered by Verizon.

<sup>118</sup> *See, e.g.*, Comments of AT&T at pp. 50-51.

reached in preempting state commission's authority over intrastate exchange access would only exacerbate the uncertainty that would likely result if, during the pendency of legal challenges of any such decision,<sup>119</sup> preemption was the conclusion that the Commission would reach. Moreover, if preemption proponents have their way with respect to the establishment of ICC rates, significant questions with respect to undermining universal service in RLECs' service areas would be raised. Ultimately, therefore, the Nebraska Companies respectfully submit that, based on the major parties' arguments to date, significant issues exist which should lead to the Commission to conclude that the better position is to work with the states rather than attempt to preempt state commission authority over intrastate exchange access rates, terms and conditions.

The Nebraska Companies need not repeat the arguments with respect to why the Act's structure as implemented and interpreted by the Commission and the courts may very well result in a reversal of any decision to preempt state commission authority over intrastate access. The record is replete with those arguments.<sup>120</sup>

As such, parties seeking preemption of state commission authority should not be permitted to side step the legal proposition that preemption is something that is "not likely to be presumed."<sup>121</sup> Moreover, the Nebraska Companies note that contentions regarding the need for

---

<sup>119</sup> See, Section XV Comments of NARUC at p. 6.

<sup>120</sup> See, e.g., Comments of the State Joint Board Members at pp. 143-145; Comments of NASUCA at pp. 93-95; Comments of NARUC at pp. 9-13; Comments of the Regulatory Commission of Alaska at p. 9; Comments of the California Public Utilities Commission at p. 19; Comments of the Public Service Commission of the District of Columbia at p. 2; Comments of the Kansas Corporation Commission at p. 11; Comments of the Indiana Regulatory Utility Commission at p. 11.

<sup>121</sup> *Greater Washington Bd. of Trade v. District of Columbia*, 948 F.2d 1317, 1320 (D.C. Cir. 1991); see also *Missouri Bd. of Examiners for Hearing Instrument Specialists v. Hearing Help Exp., Inc.*, 447 F.3d 1033, 1035 (8th Cir. 2006) citing *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 518-19, 112 S.Ct. 2608, 120 L.Ed.2d 407 (1992); *Qwest Corp. v. Scott*, 380 F.3d 367, 374

preemption are particularly peculiar at this time. The Commission has properly sought to strengthen the state/federal partnership regarding universal services,<sup>122</sup> and that partnership should also contemplate rational and complementary public policy frameworks from one of the major revenue resources – exchange access – that has, in conjunction with federal USF, allowed universal service in rural areas to flourish.

At bottom, however, what is missing is any sustainable justification with respect to the more prominent assertions that the parties promoting preemption make. And, as to these assertions, the Commission should subject them to increased scrutiny and explicit fact finding rather than accepting such assertions at face value.

Preemption proponents' arguments appear to be centered on three primary contentions. First, the record reflects contentions that a combination of Section 201(b) Section 251(b)(5) regarding the reciprocal compensation obligations associated with telecommunications and Section 251(g) regarding the institutionalization of certain pre-Act interconnection and compensation obligations allows preemption of state commissions' authority over intrastate access,<sup>123</sup> notwithstanding other sections of the Act (such as Section 152(b) and Section 251(d)). Second, the preemption proponents allege that, once calls are routed over IP connections or are made from wireless providers, the "inseverability" exception associated with the inability to distinguish the jurisdiction of such traffic allows preemption of state commission authority over

---

(8th Cir. 2004) quoting *Calif. Fed. Sav. and Loan Ass'n v. Guerra*, 479 U.S. 272, 281, 107 S.Ct. 683, 93 L.Ed.2d 613 (1987).

<sup>122</sup> See *NPRM* at paras. 84-85.

<sup>123</sup> See generally Comments of Sprint-Nextel, Attachment A at pp. A.1 to A.7; Comments of AT&T at pp. 41-42.

intrastate exchange access rates, terms and conditions.<sup>124</sup> Finally, the preemption proponents claim that, absent preemption, federal policies would be frustrated regarding the establishment of uniform intercarrier rates<sup>125</sup> or if such reform proposals did not cover “*every substantial class of traffic. . .*.”<sup>126</sup>

The Nebraska Companies respectfully submit that the Commission should be leery of adopting these contentions. For example, any party contending that Section 251(g) of the Act is an open-ended transitional mechanism available to the Commission to preempt state commission authority over intrastate exchange access rates, terms and conditions must reconcile that position with the fact that, as noted by the State Joint Board Members, the Act required to implement Section 251(b)(5) within six months of enactment of the Act.<sup>127</sup> The Nebraska Companies submit that the preemption proponents have a particularly difficult burden in this regard when such contentions must also be reconciled with Congress’ explicit retention of state access regulation and state commission authority.<sup>128</sup> Since Congress knew how to differentiate between the words “subsection” and “section” within Section 251 and thus the “section” that must be implemented within 6 months of the passage of the Act was the entirety of the Section 251,<sup>129</sup> it would appear that the better reading of Section 251(d)(1) is that the six month implementation

---

<sup>124</sup> See, e.g., Comments of Verizon and Verizon Wireless at pp. 26-27.

<sup>125</sup> See *id.* at p. 38.

<sup>126</sup> Comments of AT&T at p. 46 (emphasis in original).

<sup>127</sup> See Comments of State Joint Member at p. 144; *see also* 47 U.S.C. §§ 251(d)(1).

<sup>128</sup> See 47 U.S.C. § 251(d)(3).

<sup>129</sup> Compare 47 U.S.C. § 251(c)(“In addition to the duties contained in *subsection (b)*...)(emphasis added) and 47 U.S.C. § 251(d)(1)(“Within 6 months after the date of enactment of the Telecommunications Act of 1996, the Commission shall complete *all* actions necessary to establish regulations to implement the requirements *of this section.*”)(emphasis added).

requirement would apply to all requirements of Section 251 and that Section 251(g) was intended to ensure that the current requirements imposed upon local exchange carriers during the time period before such regulations would not be affected.

With respect to so-called inseverability of traffic, equally suspect is the contention that the Commission has already blessed the notion that if tracking and identification of traffic is too costly in the IP world, such measurements should not be imposed.<sup>130</sup> There has been no reconciliation of this proposition with actual operation of increasingly sophisticated networks since 2004 when such statement was made by the Commission. From a practical perspective, if these contentions were sustainable, it would reasonably be expected that the parties making such contentions would have been able to reconcile their contentions with the fact that the Commission requires 911 services to be provided by interconnected VoIP service providers (and to be effective, 911 services must know the “Registered Location” of the end user that is calling)<sup>131</sup> and that wireless providers (as well as VoIP providers) are able to provide traffic studies in an effort to opt out of applicable federal USF “safe harbor” contribution percentages.<sup>132</sup> Further, the Commission has recently made clear that geographic location of end

---

<sup>130</sup> See Comments of Verizon and Verizon Wireless at pp. 35-36.

<sup>131</sup> See 47 C.F.R. §§ 9.5(b)(2) and (d), 9.3 (Definition of “Registered Location”).

<sup>132</sup> See, e.g., 2011 Telecommunications Reporting Worksheet Instructions, Form 499-A at 23 and n. 44. In the context of interconnected VoIP, the FCC has already determined that, when establishing the VoIP safe harbor percentages, that the record before it demonstrated that “traffic studies are a feasible option for providers of interconnected VoIP” and further noted the new requirements that wireless providers submit their traffic studies to the Commission and USAC for approval. *In the Matter of Universal Contributions Methodology, et al., Report and Order and Notice of Proposed Rulemaking*, WC Docket No. 06-122, CC Docket No. 96-45, CC Docket No. 98-171, CC Docket No. 90-571, CC Docket No. 92-237 and NSD File No. L-00-72, CC Docket No. 99-200, CC Docket No. 95-116, CC Docket No. 98-170 and WC Docket No. 04-36, FCC 06-94, released June 27, 2006 at para. 57 (citation omitted); see also *id.* at para 9 citing *In the Matter of Federal-State Joint Board on Universal Service, Memorandum Opinion and Order*

users in the context of fixed VoIP are readily ascertainable since “the Commission has shown that it is possible to separate the interstate and intrastate revenues of interconnected VoIP providers for purposes of calculating universal service contributions.”<sup>133</sup>

In light of these rulings, the parties that contend that traffic cannot be measured and thus the jurisdictional nature of the traffic between state and interstate traffic cannot be identified should be rejected. So too, the contentions made by parties about no regulatory purpose in requiring such identification and measurement should also be rejected.<sup>134</sup> Proper application of ICC mechanisms, coupled with the adverse impact on revenues that support universal service, require traffic to be properly identified and jurisdictionalized.

Further, preemption proponents contending that the reconciliation of state and federal policies are impossible<sup>135</sup> would still need to demonstrate why a change in policy by the Commission is rational and justified when the policy of proposing reforms to universal service and ICC between states and the Commission seem to be embraced by the majority of the regulators.<sup>136</sup> In short, these types of showing by the preemption proponents have not been

---

*and Further Notice of Proposed Rulemaking*, CC Docket No. 96-45, 13 FCC Rcd 21252, 21257 (para. 11).

<sup>133</sup> See *In the Matter of Universal Service Contribution Methodology, Petition of Nebraska Public Service Commission and Kansas Corporation Commission for Declaratory Ruling or, in the Alternative, Adoption of Rule Declaring that State Universal Service Funds May Assess Nomadic VoIP Intrastate Revenues, Declaratory Ruling*, WC Docket No. 06-122, FCC 10-185, released November 5, 2010 at para.15.

<sup>134</sup> See, e.g., Comments of Verizon and Verizon Wireless at pp. 36; Comments of AT&T at p. 44.

<sup>135</sup> See, e.g., Comments of Verizon and Verizon Wireless at p. 40; Comments of AT&T at p. 46.

<sup>136</sup> See, e.g., Comments of the Regulatory Commission of Alaska at p. 25; Comments of the California Public Utilities Commission at p. 19; Comments of the Public Service Commission of the District of Columbia at p. 3; Comments of the Kansas Corporation Commission at p. 38; Comments of the Indiana Regulatory Utility Commission at p. 11; Comments of the Missouri Public Service Commission at pp. 19-24; Comments of the Nebraska Public Service Commission

made. And, it defies common sense for those contending that the setting of a default method of establishing a rate – such as a “cap” of \$0.0007 – is simply the creation of a “methodology”<sup>137</sup> or that the establishment of “bill and keep” as the “default final compensation rule for all PSTN traffic”<sup>138</sup> is consistent with the rate setting authority that is left to the states under Section 251 of the Act. Creation of so-called “cap” or establishing bill and keep as the default arrangement are effectively the setting of a rate and amount to nothing more than transparent attempts to end run governing precedent that the Commission cannot set rates under Section 251.<sup>139</sup>

Accordingly, the Nebraska Companies respectfully submit that the Commission should reject efforts by parties to have the Commission preempt state authority over intrastate exchange access rates, terms and conditions. In doing so, the Nebraska Companies respectfully submit that the Commission should work jointly with states on reforms that preserve and advance universal service, a component of which is funded by the revenues being generated by RLECs through ICC exchange access services.

**V. EFFORTS TO HAVE THE COMMISSION PLACE ITS IMPRIMATUR ON EFFORTS OF CARRIERS TO PLACE THEIR INTERCONNECTION TRANSPORT OBLIGATIONS UPON RURAL LOCAL EXCHANGE CARRIERS SHOULD BE REJECTED.**

In response to the Commission’s request for comments on interconnection and related issues,<sup>140</sup> a number of commenters seek to distort the proper construction of the interconnection

---

at pp. 25-27; Comments of the Public Utilities Commission of Ohio at pp. 45-46; Comments of the Washington Utilities and Transportation Commission at pp. 6-13.

<sup>137</sup> See Comments of Verizon and Verizon Wireless at p. 44; Comments of AT&T at p. 50.

<sup>138</sup> Comments of AT&T at p. 48.

<sup>139</sup> See, e.g., Section XV Reply Comments of the Nebraska Companies at pp. 11-13.

<sup>140</sup> *NPRM* at paras. 678-689.

requirements of Section 251 and the Commission's interconnection rules. These efforts appear to seek to have the Commission place its imprimatur on a framework that would allow a carrier to shift interconnection transport obligations associated with their chosen form of interconnection to the RLECs. Whether these efforts take the form of "separate rating and routing" of traffic based on distinct points for the rating of a number to one center but routing the traffic to a separate and distinct rate center (typically a tandem not operated by the RLEC)<sup>141</sup> or a single point of interconnection ("POI") within a Local Access and Transport Area ("LATA"),<sup>142</sup> the unlawful result is the same. These positions all center on an effort to (1) ignore the requirement that transport obligations of a carrier begin and end on its side of the POI,<sup>143</sup> or (2) impose upon an incumbent local exchange carrier ("ILEC") of a "superior" form of interconnection<sup>144</sup> for the benefit of the competing carrier that is unlawful under the Act.<sup>145</sup> As

---

<sup>141</sup> See Comments of CITA at pp. 44-45.

<sup>142</sup> See Comments of Charter at pp. 2-6.

<sup>143</sup> See, e.g., 47 U.S.C. § 251(c)(2)(b) (The POI must be "within the carrier's network"); 47 C.F.R. § 51.701(c) (Transport is defined as "the transmission and any necessary tandem switching of telecommunications traffic subject to Section 251(b)(5) of the Act *from the interconnection point* between the two carriers to the terminating carrier's end office switch that directly serves the called party, or equivalent facility provided by a carrier other than an" ILEC. (emphasis added))

<sup>144</sup> For convenience, the Nebraska Companies use the phrase "superior form of interconnection" to mean a form of interconnection that surpasses that which is required under Section 251(c) of the Act – that interconnection need only be of "equal in quality" to that which the ILEC provides itself or to other carriers. See 47 U.S.C. § 251(c)(2)(C).

<sup>145</sup> *Iowa Utils. Bd. v. F.C.C.*, 120 F.3d 753, 813 (8th Cir. 1997) ("*IUB I*"); *Iowa Utils. Bd. v. Federal Communications Commission*, 219 F.3d 744, 758 (8th Cir. 2000) ("*IUB II*"). For example, the United States Court of Appeals for the 8<sup>th</sup> Circuit has already indicated that "the superior quality rules violate the plain language of the Act," and the "at least equal in quality" does not mean "superior quality" and "[n]othing in the statute requires the ILECs to provide superior quality interconnection to its competitors.") *IUB II*, 219 F.3d at 758; see also *IUB I* at 813 (Competitive carriers requesting interconnection should have access "only to an incumbent LEC's *existing* network -- not to a yet unbuilt superior one"; the nondiscrimination aspect of the

such, the Nebraska Companies respectfully submit that any efforts by entities in this proceeding to violate these Congressional and judicial principles should be rejected.

The Nebraska Companies respectfully request that the Commission reject, once and for all, claims by entities that they have a right to impose superior forms of transport obligations (and thus interconnection) upon an RLEC. To be sure, the Nebraska Companies are not contending that the Commission's reciprocal compensation rules do not apply with respect to transport obligations *within* their ILEC local exchange network that would be used for intra-network local calling by the RLEC's end user customers. Those obligations are clear. However, nothing in the Act, prior Commission decisions, or other policies support the contention that an RLEC has a transport obligation beyond its side of the POI/ Interconnection Point with another carrier, let alone transport beyond the RLECs' network.<sup>146</sup>

Thus, while Charter apparently agrees that the Commission's "Calling Party's Network Pay" ("CPNP") construct obligates carriers "to deliver their traffic to the point of interconnection,"<sup>147</sup> Charter then appears to backtrack on this statement. Charter states that, in the context of whether the Commission should adopt rules governing transit, the CPNP "principles apply to traffic that is exchanged through a transit provider. As such, the *originating*

---

Act "merely prevents an incumbent LEC from arbitrarily treating some of its competing carriers differently than others; it does not mandate that incumbent LECs cater to every desire of every requesting carrier."(emphasis in original)).

<sup>146</sup> That the focus of Section 251(c) interconnection is on the ILEC's network cannot be seriously disputed. Section 251(c)(2) includes the condition that the interconnection must be no more than "equal to" that provided by an ILEC to itself or to others (47 U.S.C. § 251(c)(2)(C) (The duty to provide interconnection must also be one "that is at least equal in quality to that provided by the local exchange carrier to itself. . . .")), and that the interconnection point for the interconnection arrangement must be "within the [incumbent] carrier's network. *See* 47 U.S.C. § 251(c)(2)(B).

<sup>147</sup> *See* Comments of Charter at pp. 7-8.

*party* should be responsible for compensating the transit provider, and the terminating carrier . . . for the transit and termination functions provided to the originating party.”<sup>148</sup> Charter is wrong.

If the POI is required to be within the RLEC’s network (as the Act requires), that requirement is not changed simply because a carrier competing with that RLEC elects to indirectly interconnect to the POI using a tandem provider’s transit service. The POI still governs the RLEC’s obligation regarding delivery of its traffic, and the transit charges – both in the originating and terminating direction – become the responsibility of the competing carrier. This conclusion is appropriate because, in the described transit arrangement, the competing carrier is being compensated from the symmetrical reciprocal compensation rates for the transit functions of calls being delivered to it from the POI/Interconnection Point, a component of which is the transport from the POI/Interconnection Point as defined in 47 C.F.R. § 51.701(c). Absent that conclusion, the competing carrier would be *double recovering* a portion of its transport (that being the element of transit transport from the competing carrier’s side of the POI/Interconnection Point) that arises from that competing carrier’s election to use a transit service in the first place.

Likewise, Charter’s statement regarding the POI also improperly infers that some “single POI per LATA” that it may have with a Bell Operating Company would apply to an RLEC. A POI established in another carrier’s network by definition cannot create a POI *within* the RLEC’s network.<sup>149</sup> Moreover, Charter cannot reconcile its position with the requirements of Sections 251(c)(2)(B) and 251(c)(2)(C) as well as the requirements of *IUB-I* and *IUB-II*, which determined that any form of superior interconnection requirement (which in this case would be

---

<sup>148</sup> *Id.* at p. 13 (emphasis in original; footnote omitted).

<sup>149</sup> See Comments of Charter at p. 3 and n.7 and p. 4.

the transport of traffic beyond the scope that the ILEC provides to its own local exchange service customer) is unlawful.

Further, there are *no* “existing statutory rights to use a single POI per LATA” by a competitor, as Charter contends.<sup>150</sup> Charter has not and cannot explain how a “statutory right” to a single POI in a LATA can be derived from a private agreement between an ILEC and a competitive carrier,<sup>151</sup> let alone how that private agreement can somehow be applied *carte blanche* to entities unrelated to that agreement. Charter’s burden is even more difficult when the decision upon which it relies – the *SWBT 271 Decision* – was made four years after the Act was passed.

In addition, if Charter is contending that its alleged “statutory right” to a single POI per LATA somehow requires an ILEC to transport traffic beyond its network under the general “indirect interconnection” obligation under Section 251(a),<sup>152</sup> then Charter’s position is further at odds with the fact that a construction of Section 251(a) cannot create a greater obligation for an RLEC than that which could be required arising from the most significant interconnection obligations under Section 251(c). In this regard, the Nebraska Companies note that the Commission has already determined that Section 251(a), Section 251(b) and Section 251(c)

---

<sup>150</sup> See *id.* at p. 7.

<sup>151</sup> See *In the Matter of Application by SBC Communications, Inc., Southwestern Bell Telephone Company, And Southwestern Bell Communications, Inc. d/b/a Southwestern Bell Long Distance, Pursuant to § 271 of the Telecommunications Act of 1996 To Provide In-Region, InterLATA Services In Texas, Memorandum Opinion and Order*, CC Docket No. 00-65, FCC 00-238 (released June 30, 2000) (“*SWBT 271 Decision*”); see also Charter Comments at p. 3, n.7.

<sup>152</sup> See *id.* at p. 3 and n.6.

interconnection requirements are an ever-escalating set of obligations.<sup>153</sup> Thus, Section 251(a) obligations cannot be greater than those of Section 251(c)(2)(B) which requires the POI/Interconnection Point to be within the ILEC's network.

Finally, Charter's apparent effort to create a general proposition that it is always efficient to have a single POI within an RLEC's network<sup>154</sup> should also be rejected. Such contention ignores the specific factual and public policy considerations (such as control over traffic, proper billing, network connectivity) that are inherently better suited to a specific determination made in the context of an interconnection issue and/or issue before a state commission acting in its role under Section 252 of the Act<sup>155</sup> or applicable state law in the context of an Extended Area Service ("EAS") service arrangement.<sup>156</sup> With respect to this latter point and in light of Charter's reference to EAS in particular,<sup>157</sup> the Nebraska Companies note that the Nebraska Public Service Commission has already rejected (and properly so) the contention that an RLEC

---

<sup>153</sup> See *In the Matter of Total Telecommunications Services, Inc. and Atlas Telephone Company, Inc. v. AT&T Corporation*, Memorandum Opinion and Order, File No. E-97-003, FCC 01-84, released March 13, 2001, at para. 25.

<sup>154</sup> See Comments of Charter at p. 4.

<sup>155</sup> State commission roles in resolving interconnection issues could occur, for example, in the case of an arbitration (*see* 47 U.S.C. § 252(b)) or in interpreting and enforcing an already existing interconnection agreement where a dispute arises. *See e.g., Southwestern Bell Tel. v. Connect Communications Corp.*, 225 F.3d 942, 946 (8<sup>th</sup> Cir. 2000).

<sup>156</sup> EAS is a service where, typically, arising from measureable community of interest calling needs established between two ILECs, state commissions re-categorized that traffic as non-toll calling rather than intrastate toll. The costs of such originating and completing these newly-categorized calls were then recovered by the ILECs through, for example, an increase in their respective local exchange service rate or EAS rate additives and/or a contractual intercarrier settlement arrangement between the two ILECs. The Commission has already determined that the treatment of EAS calling arrangements under the Section 251(b)(5) regime is something left to the state commissions to decide. *See In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order*, CC Docket No. 98-96, 11 FCC Rcd 15499 (1996) at para. 1035.

has the obligation to transport EAS traffic beyond its network.<sup>158</sup>

**VI. WIRELESS AND SATELLITE TECHNOLOGIES SHOULD NOT FORM THE BASIS FOR COMMISSION ADOPTION OF CAF AND FEDERAL USF PROPOSALS RELATING TO THE RLECS.**

**A. CTIA's Comments Are Predictably Biased In Favor Of Wireless Technologies And Cannot Form The Basis For Commission Adoption Of CTIA's CAF Proposal Relating To The RLECs.**

The CTIA Comments contain many statements that require clarification or correction and do not accurately represent the facts. The Nebraska Companies believe that wireless and wireline access technologies are complementary technologies. Consumers desire both services, but for different reasons, and as discussed in the technical paper attached as Appendix A to these Reply Comments, there are technical limits with wireless technology that cause wireline technology to be better suited to meet the country's broadband needs in the near-term and into the future. Wireless will be used to primarily serve customers' mobile voice and limited broadband application needs, while the wireline network will provide their high-speed broadband needs.

**1. The Consumer's Broadband Experience In Rural Areas Will Be Greatly Diminished If The Commission Adopts CTIA's Proposal To Limit CAF Funding To Areas Without Mobile Broadband Quality Coverage.**

CTIA proposes that the Commission eliminate USF support where there is an unsubsidized competitor providing broadband.<sup>159</sup> CTIA asserts that there are numerous study

---

<sup>157</sup> See Comments of Charter at p. 7.

<sup>158</sup> See generally, *In the Matter of the Commission, on its own motion, seeking to investigate whether it is appropriate for telecommunications companies to assess intrastate transit charges on Extended Area Service Traffic*, Order, Application No. C-4165/PI-150, entered August 3, 2010; see also *Order Establishing Requirements for the Exchange of Local Traffic*, Case 00-C-0789, issued December 22, 2000 (New York PSC).

<sup>159</sup> Comments of CTIA at p. 26.

areas served by ILECs receiving high-cost support in which wireless carriers are providing broadband without any high-cost support.<sup>160</sup> Yet, CTIA requests that the Commission define broadband without any reference to any particular technology.<sup>161</sup> According to CTIA, any proposed speed targets must not exclude mobile wireless broadband services.<sup>162</sup> CTIA points out that the Commission has acknowledged that mobile wireless broadband is particularly susceptible to factors that may affect speed – factors that are not present in wireline networks.<sup>163</sup> CTIA’s proposal to dumb down the definition of broadband in order to claim wireless carriers are providing a competitive broadband service would simply eliminate support for broadband as defined by the Commission. The end result would diminish the consumer’s broadband experience in rural, high-cost areas. The shortfalls of relying on a wireless network for fixed broadband services are discussed in more detail in Section VI.B and Appendix A of these Reply Comments.

## **2. CTIA’s Conclusions Are Based On A Distortion Of The Facts.**

In its comments, CTIA references the Commission’s report, *Internet Access Services: Status as of June 2009*,<sup>164</sup> to suggest that consumers “are embracing mobile broadband faster than any other broadband platform.”<sup>165</sup> Yet, in making this statement, CTIA’s definition of

---

<sup>160</sup> *Id.* at pp. 26-27.

<sup>161</sup> *Id.* at p. 32.

<sup>162</sup> *Id.* at p.33.

<sup>163</sup> *Id.* at p. 34.

<sup>164</sup> Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, *Internet Access Services: Status as of June 2009* (the “June 2009 Report”).

<sup>165</sup> Comments of CTIA at p. 4.

broadband (768 kbps down and 200 kbps up)<sup>166</sup> does not meet the Commission's definition of broadband (4 Mbps down and 1Mbps up).<sup>167</sup> Thus, CTIA's statement has no relevance to the current discussion regarding broadband deployment and availability. The facts and statistics that CTIA provides in the CTIA Comments are based on a definition of broadband that has not been accepted by the industry or the Commission. When using the Commission's definition of broadband from the *June 2009 Report*, the customers that are embracing mobile broadband would still be considered unserved.

Moreover, CTIA's reliance on the *June 2009 Report* specifies that from June 2009 to June 2010, the number of mobile wireless connections with download speeds of at least 768 kbps increased by over 150% and accounted for almost 85% of all new connections in that speed range. However, this Report does not state that consumers are giving up their wired broadband service in exchange for mobile broadband and, in fact, the *June 2009 Report* provides no basis to conclude that a consumer preference for mobile broadband exists to the exclusion of any other broadband platform. Instead, the *June 2009 Report* simply shows that 85% of the new connections during this timeframe were mobile. CTIA's statements fail to reflect that consumers have been enjoying speeds far in excess of 768kbps using terrestrial network technologies (fiber to the premises, digital subscriber line and cable) for many years, before these speeds were available through mobile wireless networks.

CTIA also quotes various statistics from the July 7, 2010 Pew Internet Mobile Access 2010 paper.<sup>168</sup> CTIA uses these statistics in an effort to demonstrate the fast growth of wireless

---

<sup>166</sup> *Id.* at p. 5.

<sup>167</sup> Federal Communications Commission, Connecting America: The National Broadband Plan, released Mar. 16, 2010 (National Broadband Plan), p. 135.

<sup>168</sup> *Id.* at p. 6.

Internet adopters. However, the Nebraska Companies note that the context in which these statistics were presented incorrectly implies that wireless Internet access is displacing wireline Internet access. To be clear, the *Pew Paper* uses the term “wireless Internet adopters” to include all forms of wireless uses for Internet access, not just mobile wireless users. In fact, the *Pew Paper* defines “wireless Internet” as Wi-Fi or mobile wireless connections. Wi-Fi connections are normally used as a localized extension of a landline network. For example, according to the *Pew Paper*, if a consumer had a Wi-Fi router at his or her house that was connected to a fiber to the premises landline connection, the consumer would be considered a “wireless Internet adopter” when using the Wi-Fi connection in his or her laptop to access their landline broadband network. In this scenario, the Wi-Fi connection is simply an extension of the landline network and could hardly be considered a wireless Internet user in the sense CTIA would portray.

In addition, CTIA specifically cites the *Pew Paper* as stating “...20 percent of those who have not graduated from high school, and 15 percent of those who have graduated from high school but have not attended college, connect to the Internet solely through a mobile wireless connection.”<sup>169</sup> The Nebraska Companies note that this is not what the referenced *Pew Paper* actually states. The *Pew Paper* states that these categories of people are “cell-only wireless users,” implying that they do not use wireless connections other than cellular and in fact makes no reference to the fact that this group of people may use landline-based Internet connections.<sup>170</sup>

---

<sup>169</sup> Pew Internet – Mobile Access 2010 (<http://pweinternet.org/Reports/2010/Mobile-Access-2010.aspx>) at p. 6 (the “*Pew Paper*”).

<sup>170</sup> *Id.* at p. 10.

Accordingly, there is no basis for CTIA to claim that “[i]n this way, the mobile platform is delivering broadband availability to those that otherwise might not have it.”<sup>171</sup>

The CTIA Comments also included a chart that purportedly illustrates decreasing ILEC end user lines while wireless subscriber connections are increasing to attempt to demonstrate that decreases in wireline access lines (voice services) and increases in wireless voice lines mean consumers are shifting to “broadband and mobile technologies.”<sup>172</sup> The Nebraska Companies recognize that analog voice lines have been decreasing over the years as consumers replace landline voice services with mobile services. Nonetheless, CTIA’s efforts to extrapolate from this fact that wireless broadband is replacing wireline-based broadband connections are without merit.

The Commission has published data on fixed-location Internet access.<sup>173</sup> Figure 1 contains a chart derived from data in this Commission report.<sup>174</sup> This chart clearly shows that fixed-location Internet access has been steadily and dramatically *increasing*.

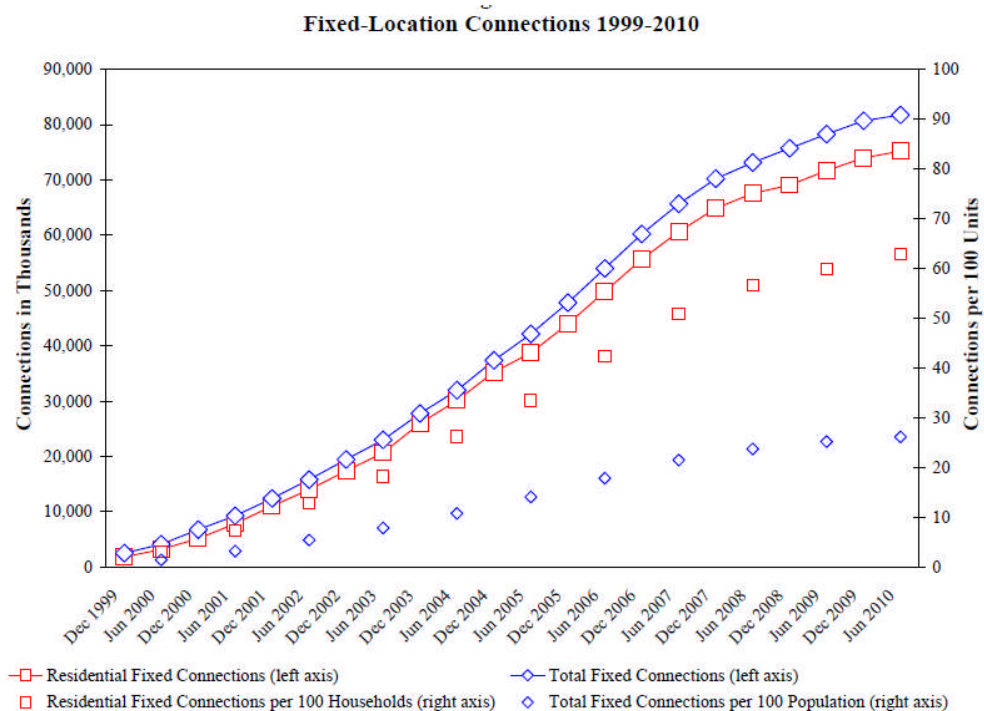
---

<sup>171</sup> Comments of CTIA at p. 6.

<sup>172</sup> *Id.* at p. 8.

<sup>173</sup> FCC Report “Internet Access Services: Status as of June 30, 2010 – Industry Analysis and Technology Division Wireline Competition Bureau March 2011”, [www.fcc.gov/wcb/stats](http://www.fcc.gov/wcb/stats).

<sup>174</sup> *Id.* at p. 9.



**Figure 1 – FCC Fixed-location Internet Access**

In addition, the CTIA chart also improperly infers a determination of the number of customers that the wireless or wireline connection can serve. However, the Nebraska Companies note that most mobile wireless connections provide Internet to a single consumer, whereas a wireline connection to a residence or business is often shared by multiple users. Thus, in the CTIA chart, a broadband connection to a home that houses a family of four Internet users is counted only as one connection rather than four. In this respect, a single wireline connection should be considered as more valuable than a single wireless connection.

**a. Wireless Is Not The “Most Efficient” Solution As The CTIA Comments Imply.**

In its comments, CTIA asserts that wireless is “often being the most efficient technology,”<sup>175</sup> which CTIA believes is in agreement with the Commission.<sup>176</sup> The Nebraska Companies dispute this assertion and put forth the attached paper entitled “Wireless Technology Cannot Deliver Broadband Services as Envisioned in the National Broadband Plan” included as Appendix A to these Reply Comments. Produced by the engineering and consulting firm Vantage Point Solutions, this paper contains a detailed technical analysis of the cost and capabilities of wireless technology in comparison to wireline technology.

To the contrary, wireless networks are not a more efficient medium for fixed broadband delivery than a fiber-based landline network “[g]iven the inherent capacity of one fiber optical link exceeds the entire available radio frequency (RF) spectrum.”<sup>177</sup> However, the Nebraska Companies have also shown that the spectral efficiency assumptions from the OBI Technical Paper No. 1 were inappropriate and improperly slanted in favor of the wireless technologies.<sup>178</sup> Even after removing the top 10% of data users and utilizing the 160 kbps Busy Hour Offered Load (BHOL) found in the OBI Technical Paper No. 1, the capacity of a wireless network will not be capable of meeting the Commission’s announced goal of delivering a “robust broadband experience,” at the 4/1Mbps standard,<sup>179</sup> let alone the projected increased future broadband demands. Due to the significant wireless limitations and the shared access nature of wireless technology, a wireless network will struggle to offer “reasonably comparable services” to rural

---

<sup>175</sup> Comments of CTIA at p.22.

<sup>176</sup> OBI Technical Paper No.1 (2010) at 13, Exh. 1-J.

<sup>177</sup> Rysavy Research, EDGE, HSPA, and LTE Broadband Innovation, 3G Americas, September 2008 at p. 5.

<sup>178</sup> OBI Paper Comments, Nebraska Rural Independent Companies at p.23.

<sup>179</sup> *Id.* at p. 15.

America with today's broadband demands, much less the broadband demands of the future. These findings are reinforced in the technical analysis included in Appendix A hereto.

Accordingly, there is no basis to suggest that wireless is the most efficient technology for provision of broadband service. CTIA's suggestion to the contrary should be rejected.

**b. Wireless Is Not The "Most Cost Effective" Solution As CTIA's Comments Claim.**

In the CTIA Comments, CTIA also refers to wireless "often being the most efficient use of scarce public funds."<sup>180</sup> CTIA's characterization contradicts the Commission's conclusion that "[w]ireline tends to be cheaper in low-density areas..."<sup>181</sup> Further evidence to refute CTIA's characterization that wireless is as cost effective as landline networks when compared over the long term is provided in the technical analysis found in Appendix A. Moreover, the Commission's conclusion has been further supported by the *Vantage Point Study* of four Great Plains Communications exchanges. In the *Vantage Point Study*, Vantage Point demonstrated that wireless was still estimated to be more expensive than wireline DSL service for all four exchanges, even with a wireless oversubscription ratio that was nine times greater even with a wireless oversubscription of ratio of nine to one.<sup>182</sup> By comparison, DSL/FTTH wireline access networks do not have oversubscription.

The Nebraska Companies have also shown through the *Vantage Point Study* that when the per subscriber service offerings were scaled equally between the wireless and wireline

---

<sup>180</sup> Comments of CTIA at p.22.

<sup>181</sup> *Broadband Gap Paper*, at p.10. The Broadband Gap Paper also draws similar conclusions about the relative "gap" of wireline and wireless.

<sup>182</sup> Vantage Point Study at p.9.

4/1Mbps DSL design,<sup>183</sup> to account for a full 4/1Mbps service offering<sup>184</sup> to each subscriber, it was more cost effective to deploy a landline network than a wireless network in the Gordon Exchange. Thus, knowing that the construction of the towers required for the above scenario would prove expensive and virtually impractical,<sup>185</sup> Vantage Point also investigated adding 30 MHz of additional spectrum, for a total of 40MHz of spectrum, which was required to deliver the full 4/1Mbps service offering<sup>186</sup> to each subscriber in the Gordon Exchange. This scenario also proved not to be cost effective when compared to the comparable landline networks.<sup>187</sup>

The CTIA suggestion also cannot be reconciled with the fact that, over time, broadband speeds demanded by customers are not static. The growth rate in the speed of broadband in recent years of approximately 20% per year suggests that broadband networks might be called upon to deliver speeds significantly higher than 4 Mbps (downstream) and 1 Mbps (upstream) over the next decade. The Nebraska Companies concluded: “Simply put, if required speeds continue to double roughly every three years, demand will outstrip the capabilities of 4G and 12,000-foot-loop DSL.”<sup>188</sup> Thus, any funded network must meet the growing demand while staying cost effective over the long-term. The Nebraska Companies believe that even if DSL and

---

<sup>183</sup> *Id.* at p.63.

<sup>184</sup> Actually for the wireless network, an adjusted BHOL of 3.75Mbps was utilized rather than the proposed BHOL of 4Mbps, as the BHOL of 4Mbps per household resulted in an uneconomical network with only one subscriber per sector.

<sup>185</sup> OBI Paper Comments, Nebraska Rural Independent Companies at p.45.

<sup>186</sup> Again for the wireless network, an adjusted BHOL of 3.75Mbps was utilized rather than the proposed BHOL of 4Mbps. With the proposed 40MHz of spectrum, each sector is capable of supporting eight subscribers.

<sup>187</sup> *Id.*, Table 6-14 at p.65.

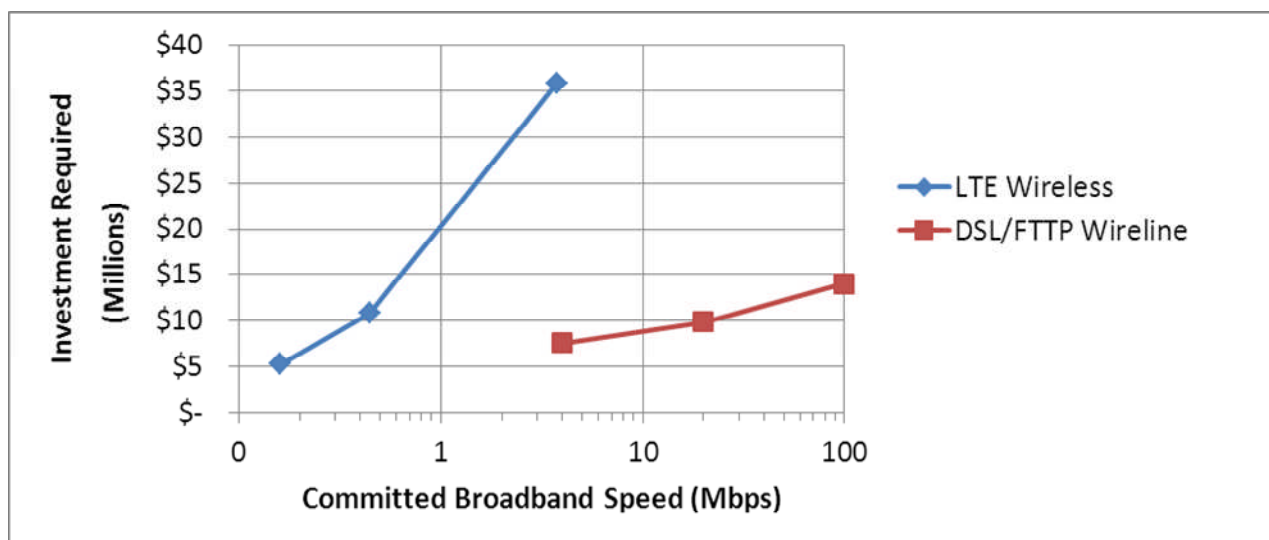
<sup>188</sup> OBI Paper Comments, Nebraska Rural Independent Companies at p.42.

existing wireless services are satisfactory for some customers today, the future growth in broadband demand will eventually overtake the ability of wireless carriers to keep pace with such demand. In the *Vantage Point Study*, the Nebraska Companies reviewed the total cost of wireless and wireline broadband over a twenty year life cycle and it was shown that DSL wireline service was less expensive than a wireless network with similar capabilities.<sup>189</sup>

Further evidence supporting the Nebraska Companies' claim that a wireless network is not as cost effective as a landline network is shown in Figure 2 below. This figure shows the investments from the *Vantage Point Study* required for each of the network designs for the Great Plains Communications Gordon Exchange plotted with respect to the committed subscriber broadband speeds that can be delivered for each respective network. This chart demonstrates that a wireless network is only capable of delivering a fraction of the committed broadband speeds to the end users and that the investments required to obtain the highest committed broadband speeds are considerably higher than the costs for a wireline network capable of much higher committed broadband speeds.

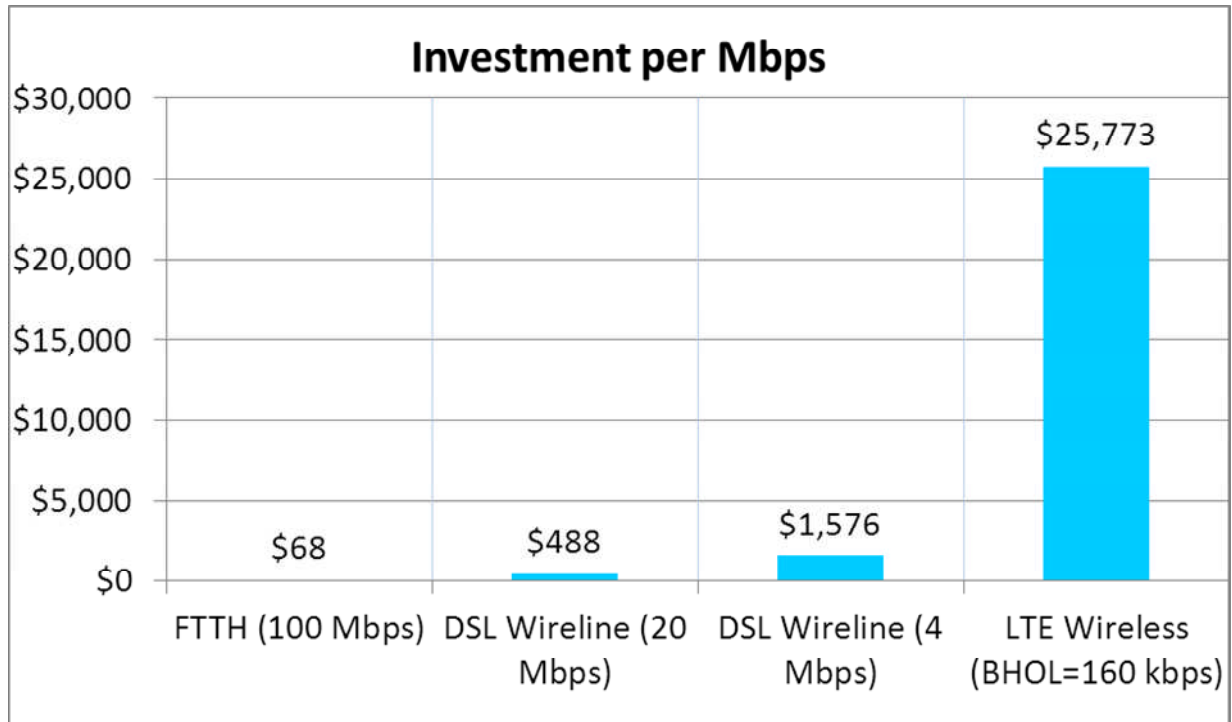
---

<sup>189</sup> Vantage Point Study at p. 56.



**Figure 2 – Gordon Exchange Investment per Committed Bandwidth Speed**

In addition, the Nebraska Companies also compared the cost of bandwidth between network designs. For the wireline scenarios, the total bandwidth was determined by multiplying the number of customer locations by the bandwidth available in the access network per subscriber (4Mbps, 20Mbps, and 100Mbps, respectively). For the wireless scenarios, the total bandwidth available from each tower was multiplied by the number of towers in the design. For both the wireline and wireless designs, the investment was divided by the calculated access network bandwidth to estimate the cost per Mbps, as shown below in Figure 3. Similar to the investment per committed bandwidth speed, the wireless network for all four of the exchanges reviewed requires a much higher cost of available bandwidth than the wireline networks.



**Figure 3 - Investment per Mbps (All Four Exchanges)**

**c. CTIA Comments Show Inherent Flaws With Wireless And Actually Make The Case That Wireline Networks Are Better Able To Meet Broadband Demand.**

Contrary to CTIA’s claims, wireless broadband is not a substitute for wireline broadband. Wireline broadband networks can provide significantly more broadband capacity than wireless networks and are more reliable and robust. As stated in Appendix A,<sup>190</sup> CTIA agrees with this conclusion when it acknowledges that reporting “actual” speed is difficult for wireless networks because of the factors such as atmospheric conditions and foliage.<sup>191</sup> CTIA also acknowledged that in tests conducted across multiple wireless devices and carriers in a single three-minute period, it observed as much as a 97 percent drop in speed followed by a 1200 percent increase in

<sup>190</sup> See Appendix A at 9.

<sup>191</sup> Comments of CTIA at p. 31.

speed.<sup>192</sup> CTIA further acknowledges that mobile wireless broadband is particularly susceptible to factors that may affect speed and that these same factors are not present in a wireline network.<sup>193</sup> As a result, CTIA's statements highlight why a robust modern wireline broadband network is essential. Wireless providers will not be able to provide reliable broadband capacity at the speeds that are being demanded by consumers.

Finally, wireless providers recognize the capacity constraints on their networks. To address these constraints, most providers now offer Femto Cells and Wi-Fi equipped handsets to their customers. Femto and Wi-Fi technologies allow mobile users to utilize the existing landline networks for applications that require a high degree of reliability and large bandwidth that the mobile network cannot offer. Mobility is important, but nevertheless it is not a replacement for wireline broadband. Wireline broadband provides the bandwidth and reliability that wireless solutions cannot provide. This is why both wireless networks AND wireline broadband networks are essential for the consumer.

**B. Satellite-Based Broadband Is Not A Viable Alternative To Wireline Broadband.**

The Nebraska Companies note that several parties contend that satellite-based broadband service should be considered as an option by the Commission as part of the universal service reforms related to the CAF that are being proposed in the *NPRM*.<sup>194</sup> In addition to the need for any such provider to meet ETC eligibility and telecommunications carrier/common carrier status required of any universal service provider as discussed in Section II.B of these reply comments,

---

<sup>192</sup> *Id.* at p. 33.

<sup>193</sup> *Id.* at p. 34.

<sup>194</sup> *See, e.g.,* Comments of Satellite Broadband Providers (DISH, EchoStar, Hughes, ViaSat, WildBlue) at 2, 5; Comments of ViaSat, Inc. at 18.

the Nebraska Companies note that it is questionable whether satellite services can, in fact, be considered to be a comparable alternative to wireline-based broadband service.

Although the Nebraska Companies understand that some satellite-based providers may be able to provide some form of limited broadband service, there is a significant question as to whether such satellite-broadband service attains the same level of quality and reliability of similar broadband services offered through wireline solutions. Thus, the Nebraska Companies respectfully submit that satellite-based broadband service should not be considered an acceptable participant in any CAF-related or federal USF-related procedure that the Commission may institute for disbursement of federal USF-related dollars. At best, satellite-based broadband services may have some limited application but only in instances where no wireline broadband alternative is possible.

The Nebraska Companies note that there are a number of satellite-based broadband service providers that offer service in the United States. HughesNet, WildBlue/ViaSat, Skyway USA, and Starband are examples of such providers. HughesNet and WildBlue/ViaSat are the two largest providers within the United States. However, according to the HughesNet website<sup>195</sup> the following activities are not recommended for use with the following types of satellite connections:

- Virtual Private Networks (VPNs);
- Twitch Games (Time-sensitive applications that require fractions-of-a-second user inputs such as real time interactive games);

---

<sup>195</sup> HughesNet Website <http://www2.hughesnet.com/faqs.cfm>.

- Heavy Downloading (although “Heavy Downloading” is not defined on the Hughes website, the plan with the highest amount of downloading is a mere 400 MB);<sup>196</sup>
- VoIP; and
- Streaming Video.

Yet, certain of these activities that Hughes recommends not be undertaken are, in turn, those that are being demanded by consumers today and account for a large portion of current Internet use as shown below in Figure VIII-1.

---

<sup>196</sup> The HughesNet Fair Access Policy states that the following popular activities will likely exceed a customer’s download allowance: Full-length movie or video downloads (*e.g.*, Netflix streaming movies), downloading very large files (*i.e.*, file sizes that are close in size to the download allowance of your service plan), Peer-to-peer (P2P) file sharing programs such as Napster, Kazaa or LimeWire, Continuous downloading or viewing streaming media content such as audio or video programming, Hosting of server devices such as email, FTP or Web servers Hosting computer applications such as Web-cam feeds, Internet-based PC backup services that archive your data on a central server, Extensive downloading of attachments from Usenet Newsgroups (NNTP), Use of BitTorrent applications.

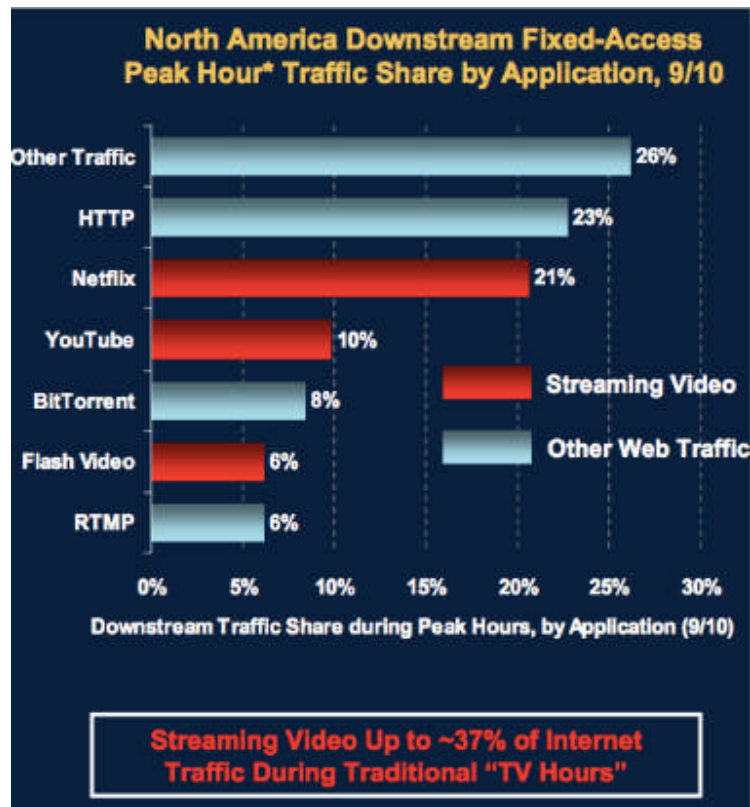


Figure VIII-1. Internet Peak Hour Traffic<sup>197</sup>

Without access to these types of heavy uses reflected in Figure VIII-1, satellite broadband falls far short of broadband services offered by wireline providers. Without the ability to adequately perform these activities, rural customers would not be able to perform important functions such as many remote medical procedures, distance learning applications, and telecommuting. The Nebraska Companies further note that the Rural Mobile and Broadband Alliance (RuMBA) recently authored a white paper<sup>198</sup> which persuasively demonstrates why satellite service should

<sup>197</sup> TechCrunch, "Web Video Hogs Up 37 Percent Of Internet Traffic During Peak TV Hours", November 19, 2010. <http://techcrunch.com/2010/11/19/web-video-37-percent-internet-traffic/>.

<sup>198</sup> Rural Mobile & Broadband Alliance (RuMBA) *Satellite Internet Connection for Rural Broadband – Is it a viable alternative to wired and wireless connectivity for America's rural communities? – A RuMBA White Paper by Stephen Cobb CISSP.*

not be considered a viable alternative to wireline broadband technologies.<sup>199</sup> Consistent with similar conclusions in the RuMBA paper, satellite broadband shortcomings can be broken into four basic categories and can be summarized as follows:

- Latency/Delay – As referenced in the OBI Technical Paper No. 1,<sup>200</sup> geostationary satellites are located more than 22,000 miles above the equator, and round trip delays between earth and geostationary satellites are large and satellite broadband services will always have significantly higher latency when compared to wireline technologies. This latency that hinders applications requiring real-time user input<sup>201</sup> such as gaming, VoIP, or remote medical procedures.
- Capacity and Speed – Like wireless technologies, satellite broadband capacity is shared by many customers. Because this capacity is shared by a large number of users over a state or multi-state region, restrictions must be enforced by the satellite provider. The restrictions placed on the amount transmitted data and connection speeds imposed by satellite providers make the service impractical for modern Internet features. In fact, as noted above, HughesNet’s website confirms the RuMBA paper’s observations. The Hughes website specifies that the following activities may cause a subscriber to exceed download allowance: Streaming movies, downloading large files, peer-to-peer file sharing, streaming

---

<sup>199</sup> *Id.*

<sup>200</sup> Federal Communications Commission, *The Broadband Availability Gap – OBI Technical Paper No.1*, April 2010 (the “*OBI Paper*”) at p.89.

<sup>201</sup> *Id.*

audio or video, hosting email or web servers, hosting web-cams, downloading attachments from Usenet Newsgroups.<sup>202</sup>

- Price/Performance – As referenced in the OBI Technical Paper No. 1<sup>203</sup>, the cost for satellite broadband service is often very expensive when compared to other technologies. Again, according to the HughesNet website,<sup>204</sup> the only available package meeting the Commission’s definition of broadband (4 Mbps down and 1 Mbps up) is the Express 500 business plan, which costs \$349.99 dollars per month. In this plan the subscriber is restricted to downloading only 800 MB of data per day. Considering a High Definition video may easily be a 5 GB download using modern compression technologies, the Nebraska Companies note that one would have to watch only a small part of the movie each day for a week in order to not exceed this limit.
- Service Reliability – Reliability and service is affected by weather<sup>205</sup> and atmospheric conditions. Wildblue admits that its service may be affected by snow and rain.<sup>206</sup> It is often during inclement weather that access to the Internet is most important to receive local and national warnings. Yet it is at such times that the satellite broadband service is the least reliable.

---

<sup>202</sup> See, <http://consumer.hughesnet.com/faqs.cfm>.

<sup>203</sup> *OBI Paper* at p.93.

<sup>204</sup> HughesNet Website <http://business.hughesnet.com/images/pricing2/HughesNet-Plan-Comparison-Chart.pdf>.

<sup>205</sup> *OBI Paper* at p. 89.

<sup>206</sup> Wildblue website <http://get.wildblue.com/faqs.html#32>.

In light of these facts, the Nebraska Companies believe that satellite-based broadband is not comparable to wireline-based broadband service. At best, satellite-based broadband service may have some limited application but only where it can be demonstrated that no wireline broadband alternative is possible. Moreover, the Nebraska Companies question whether satellite-based broadband can deliver a service that meets the Commission's proposed definition of broadband in the *NPRM* or that meets customer demands today and into the future.

Finally, the Nebraska Companies question the prudence of moving forward with any consideration of satellite-based broadband services as a participant in the federal USF at this time based on representations that there may be *possible* future services and capabilities to address the shortcomings of satellite service comparison to wireline-based service. Lisa Scalpone, General Counsel of WildBlue Communications, Inc. (a division of ViaSat, Inc.), stated at the May 18, 2011 Commission-sponsored Universal Service Fund/Intercarrier Compensation Reform Workshop in Omaha, Nebraska, that the next generation of satellites will also resolve the latency issues to provide acceptable voice quality. The Nebraska Companies question this assertion.

Since geostationary satellites are situated more than 22,000 miles above the equator, it takes more than a quarter of a second for a satellite signal to travel to the satellite and then back to earth. This results in more than a half second of round-trip delay. When processing and other system delays are included, it would not be uncommon to experience round trip delays of potentially a second or more. This latency is larger at the more northern latitudes. The International Telecommunication Union (ITU) defines acceptable network delay for voice applications in Recommendation G.114, where it recommends delays of less than 150 milliseconds. This is substantially less than the one-way delays (let alone the two-way delays) experienced in a real time voice conversation via geostationary satellites. The Nebraska

Companies are not aware of any technology advances on the horizon that would change this fact. While it is technically possible that satellite providers could still experience increases in broadband capacity through the use of spotbeams, increased signal power, and additional spectrum, the dramatic increases in capacity that would be needed to be an effective substitute for wireline broadband networks have not been proven nor demonstrated to be achievable.

Sound public policy demands that any action must be fact-based, and the same is true with respect to the Commission's action in response to the *NPRM*. Until such facts are presented by the satellite operators that show their service to be a viable substitute for wireline broadband services *and* such facts are publicly scrutinized and found to be correct, *and* assuming that a satellite provider is found to be a telecommunications carrier and is designated as an ETC, the Nebraska Companies respectfully request that satellite-based broadband providers be excluded from any consideration as participants in CAF-related or federal USF-related broadband programs.

## **VII. CONCLUSION.**

For all of the reasons provided in the Nebraska Companies' Initial and Reply Comments, the Nebraska Companies respectfully submit that the Commission should adopt and incorporate, the positions set forth in the foregoing Reply Comments into its efforts to modernize the federal USF and ICC system.

Dated: May 23, 2011.

Respectfully submitted,

Arlington Telephone Company, The Blair Telephone Company, Cambridge Telephone Company, Clarks Telecommunications Co., Consolidated Telephone Company, Consolidated Telco, Inc., Consolidated Telecom, Inc., The Curtis Telephone

Company, Eastern Nebraska Telephone Company, Great Plains Communications, Inc., Hamilton Telephone Company, Hartington Telecommunications Co., Inc., Hershey Cooperative Telephone Co., K. & M. Telephone Company, Inc., The Nebraska Central Telephone Company, Northeast Nebraska Telephone Company, Rock County Telephone Company, Stanton Telecom, Inc., and Three River Telco

**The Nebraska Rural Independent Companies**

By:   
Paul M. Schudel, No. 13723  
[pschudel@woodsaitken.com](mailto:pschudel@woodsaitken.com)  
James A. Overcash, No. 18627  
[jovercash@woodsaitken.com](mailto:jovercash@woodsaitken.com)  
WOODS & AITKEN LLP  
301 South 13th Street, Suite 500  
Lincoln, Nebraska 68508  
(402) 437-8500

Thomas J. Moorman  
[tmoorman@woodsaitken.com](mailto:tmoorman@woodsaitken.com)  
Woods & Aitken LLP  
2154 Wisconsin Ave. NW, Suite 200  
Washington, D.C. 20007  
(202) 944-9502  
Their Attorneys

## **APPENDIX A**

# **Wireless Technology Cannot Deliver Broadband Services as Envisioned in the National Broadband Plan**

**A Technical Analysis by Vantage Point Solutions**

**On Behalf of the Nebraska Rural Independent Companies**

**May 2011**



## Contents

<b>1</b>	<b>Wireline and Wireless Technologies Play Complementary Roles .....</b>	<b>3</b>
1.1	Delivering All Broadband over a Wireless Network Would Be Cost Prohibitive .....	4
1.2	Broadband's Benefits Are More Important in Rural Areas.....	6
<b>2</b>	<b>Evaluation Criteria Should Be Realistic and Technology-Neutral .....</b>	<b>7</b>
2.1	Justifying Tomorrow's Bandwidth with Today's Applications Is Inappropriate .....	7
2.2	The Commission's Broadband Assumptions Inappropriately Enabled Wireless Eligibility .....	8
2.3	BHOL, Not Peak Broadband Speed, Is the Appropriate Design Criterion .....	9
<b>3</b>	<b>Economic Comparison of Technologies Should Consider Future Demand .....</b>	<b>11</b>
3.1	Wireless Network Cost Exceeds that of a FTTP Network as Bandwidth Increases.....	11
3.2	Sensitivity Analysis of Assumptions Does Not Cause Wireless to Be More Cost Effective .....	15
<b>4</b>	<b>Conclusions.....</b>	<b>17</b>

## 1 Wireline and Wireless Technologies Play Complementary Roles

In the recent FCC NPRM released February 9, 2011 (USF/ICC NPRM),<sup>1</sup> the Commission proposes to distribute Connect America Fund (CAF) funding through a competitive auction to companies committing to deliver broadband within three years.<sup>2</sup> As will be shown herein, this proposal favors inappropriate technologies, such as wireless. Due to the high initial capital costs of a wireline solution, wireline providers have little hope of winning such an auction, and instead a short-term fixed, wireless solution would likely be funded. While wireless might be able to deliver sufficient broadband less expensively in the near term, it is ill suited, not cost effective, and incapable of meeting mid- or long-term demand. In the long term, the proposal will divert financial support from the fiber optic network that ultimately will be required to sustain and deliver both broadband access and transport – for both wireline and wireless. The Nebraska Rural Independent Companies (Nebraska Companies) submit that the entire premise of near-term reform, “to target funding more effectively to support universal service in areas served by the smaller telephone companies [in the near term], while we consider longer term proposals to provide appropriate amounts of ongoing support for areas that are uneconomic to serve”<sup>3</sup> is flawed.

In Vantage Point Solutions paper entitled, “An Engineering Analysis of the Broadband Assessment Model Using Actual Network Data” (Engineering Analysis of BAM) attached to the Nebraska Companies’ comments to the FCC’s earlier NPRM and NOI,<sup>4</sup> Vantage Point Solutions<sup>5</sup> argued that wireline and wireless services are complementary.

---

<sup>1</sup> See, *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, *High-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Inter-carrier Compensation Regime*, CC Docket No. 01-92, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Lifeline and Link-Up*, WC Docket No. 03-109, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC 11-13 (rel. Feb. 9, 2011)

<sup>2</sup> *Id.* at ¶ 162.

<sup>3</sup> *Id.*

<sup>4</sup> Comments of the Nebraska Rural Independent Companies, In the Matter of Connect America Fund - A National Broadband Plan for Our Future - High-Cost Universal Service Support, WC Docket No. 10-90, GN Docket No. 09-51, WC Docket No. 05-337 (rel July 12, 2010).

<sup>5</sup> VPS staff has over 400 years of combined experience with performing both wireless and wireline design and engineering for service providers serving rural areas. See VPS Background in Appendix A of the Engineering Analysis of the BAM or visit [www.vantagepnt.com](http://www.vantagepnt.com).

Both wireless and wireline broadband services play important roles in many customers' lives, and one will never displace the other. Today's customers expect that broadband carriers will be able to offer a plethora of applications in a variety of locations. The wireline connection is required to provide adequate bandwidth for the rich multimedia experience customers expect in their home or business,<sup>6</sup> and a wireless connection is required to meet customers' mobile needs.<sup>7</sup> As Rysavy research notes, 'sometimes wireless and wireline technologies compete with each other, but in most instances they are complementary.'<sup>8</sup>

## 1.1 Delivering All Broadband over a Wireless Network Would Be Cost Prohibitive

The cost of delivering all fixed and mobile broadband needs over a wireless network would be cost prohibitive. In a recent article for [Connected Planet](#), Kevin Fritchard provides an excellent example:

Verizon [Wireless]has created a network that does everything it can to tempt people to consume massive amounts of data, but then puts barriers in place to prevent them from consuming it (at least for a reasonable price). For instance, watching a Lord of the Rings installment or any other three-hour epic in HD over Netflix would consume the entirety of a 5-GB monthly data plan before the credits started rolling. If that same customer wanted to watch the second movie in the series they could, paying a metered rate of 1 GB for \$10, which essentially makes the second movie the same cost as the first. \$50 is a lot to pay for a movie, I'll admit. But it also costs VZW an awful lot to deliver that movie over the network, particularly if there are dozens of other people on that same cell clamoring for the same capacity.<sup>9</sup>

Anecdotally, a commenter to the article, whose self-described broadband usage mimics many American business people today, described the situation even more poignantly:

I have 8 email accounts, and probably receive 250+ spam messages per day - multiply that by 30 days and 100K / message and I just lost nearly a gig. A lot of personal email is

---

<sup>6</sup> Customers' fixed needs include cloud computing, telecommunicating, and video applications.

<sup>7</sup> Customers' mobile needs include e-mail, messaging, and social networking.

<sup>8</sup> Rysavy Research, *EDGE, HSPA, and LTE Broadband Innovation, 3G Americas*, at p. 5, September 2008.

<sup>9</sup> Kevin Fritchard, "Is VzW's 4G Network Too Fast For Its own Good?" [Connected Planet](#), December 3, 2010.

filled with picture attachments and/or links to videos – that’s gotta be another gig. My work email is filled with PDFs, excel files, docs, etc...easily another gig. I read all my newspapers and magazines online or on my phone, not to mention blogs and online news sites. I track my investments daily and look at charts and financials. Probably another gig. This is all very basic everyday stuff for most people nowadays and I have nearly exhausted the monthly limit. Watch an HD movie with my new LTE connection? Video chat? Dream on.<sup>10</sup>

Broadband consumers already recognize the problems with a wireless solution providing all services. Vision2Mobile.com warns about “jumping too far onto the mobile broadband bandwagon” because quality will suffer and cost will be higher:

Selling it as an alternative to fixed broadband will fail in both the U.S and Europe. That’s according to a new survey from Analysys Mason. The report, *The Connected Consumer Survey 2: Mobile Broadband*, says there is a strong, and correct, perception among consumers that mobile broadband is slower, less reliable and more expensive than fixed broadband. Seventy percent of those surveyed had that opinion. Mobile broadband, the report says, should not be sold as the primary means of access, but as a complement....‘The positive message for service providers is that customers have realistic expectations for mobile broadband, and are not taking it to be a direct equivalent to fixed broadband,’ says Tom Rebbeck, research director at Legg Mason and author of the report. ‘If they were, they would likely be disappointed. To sell mobile broadband as a substitute for fixed broadband would mean cutting prices while providing a poorer service – something that is unlikely to be satisfactory in the long term.’<sup>11</sup>

A modern, wireline fiber network will also be necessary in the provision of wireless service – especially in rural areas – to provide broadband backhaul of the wireless network. The Commission has noted the broadband deployment already undertaken in hard-to-serve areas “including by the National Telecommunications and Information Administration (NTIA) and the Rural Utilities Service (RUS) through

---

<sup>10</sup> *Id.*, commenter “mypaisa”  
([http://connectedplanet.disqus.com/is\\_vzws\\_4g\\_network\\_too\\_fast\\_for\\_its\\_own\\_good/latest.rss](http://connectedplanet.disqus.com/is_vzws_4g_network_too_fast_for_its_own_good/latest.rss))

<sup>11</sup> “Mobile Broadband Shouldn’t Replace Fixed Broadband –Report,” Vision2Mobile.com, February 3, 2011, <http://www.vision2mobile.com/news/2011/02/mobile-broadband-shouldn-t-replace-fixed-broadban.aspx>, emphasis added.

American Recovery and Reinvestment Act grants and loans as well as ongoing RUS programs...”<sup>12</sup> Most of these projects were Fiber To The Premises (FTTP) and fiber optic transport projects, not wireless projects. As the Engineering Analysis of BAM concluded:

Not only are wireline and wireless services complementary in the lives of their customers, but they are also complementary in the sense that wireless service depends on the speed and quality of wireline connections. To meet the mobile broadband needs of their customers, the major wireless carriers will migrate their networks to 4<sup>th</sup> Generation wireless technologies (4G). In order for this to occur, wireless towers will require high capacity connections, typically using Ethernet delivered over a landline carrier’s fiber network.<sup>13</sup>

As future wireless Radio Access Network (RAN) architecture emerges, wireless networks will depend even more on wireline networks. Future wireless technology will utilize small-coverage cells, similar to Pico cells, with baseband development accomplished in a cloud, which reduces the cost and size of cells. Such wireless technologies will require not only the maintenance, but also the expansion of the wireline network, if the wireless networks are to evolve to meet future wireless needs.

## 1.2 Broadband’s Benefits Are More Important in Rural Areas

The ability to have ready access to information is vitally important for rural customers, especially when they must travel long distances to seek medical care, purchase goods and services or obtain information. If the nation is to meet the National Broadband Plan’s (NBP’s) goals of bridging the digital divide and stimulating economic development, rural customers must be provided high-quality broadband service. Many businesspeople, rural or urban, have similar Internet usage patterns as the person quoted previously with eight e-mail accounts and 250 spam messages per day,<sup>14</sup> yet the FCC would classify this user into the lightest usage or “utility” category.<sup>15</sup> It is important to support not just rural “utility” consumers, but also the three higher categories of consumers: “emerging multimedia,” “advanced” and

---

<sup>12</sup> USF/ICC NPRM, at ¶ 13.

<sup>13</sup> Engineering Analysis of BAM, at p. 17.

<sup>14</sup> *Id.*, commenter “mypaisa”  
([http://connectedplanet.disqus.com/is\\_vzws\\_4g\\_network\\_too\\_fast\\_for\\_its\\_own\\_good/latest.rss](http://connectedplanet.disqus.com/is_vzws_4g_network_too_fast_for_its_own_good/latest.rss))

<sup>15</sup> USF/ICC NPRM, at ¶ 106.

“full media” consumers.<sup>16</sup> Indeed, the Commission agrees: “As important as these benefits are in America’s cities — where more than two-thirds of residents have come to rely on broadband — the distance-conquering benefits of broadband can be even more important in America’s more remote small towns, rural and insular areas, and Tribal lands.”<sup>17</sup> The benefits of broadband are particularly true for “Businesses, anchor institutions, and individuals [which] rely on the high-speed capabilities of fixed broadband networks for services such as high-definition remote medical consultations, ‘telepresence’ videoconferencing, and video-based distance learning.”<sup>18</sup> In order to have broadband speeds in rural areas that are comparable to speeds available in urban areas, carriers’ investments will be large, but the cost of failing will be even larger.

## 2 Evaluation Criteria Should Be Realistic and Technology-Neutral

The Nebraska Companies applaud the Commission’s proposal “to characterize broadband without reference to any particular technology”;<sup>19</sup> however, if the most cost-effective long-term solution is desired, the criteria should represent realistic broadband use for both today and tomorrow.

### 2.1 Justifying Tomorrow’s Bandwidth with Today’s Applications Is Inappropriate

Commissioner Copps elaborated upon the intensified need for rural broadband when he stated, “Bandwidth-intensive applications could very quickly become the norm in the U.S. — even in rural areas. Technologies that cannot be upgraded easily could make Internet applications less than five years from now look like the dial-up downloads of today.”<sup>20</sup> The Nebraska Companies vigorously agree with Commissioner Copps on this point. The Commission has implied that the need for higher speed thresholds will be dismissed, unless commenters can supply proof.<sup>21</sup> There is no need for speculative evidence. Based on historical broadband growth, it is reasonable to expect that bandwidth demand will

---

<sup>16</sup> *Id.*

<sup>17</sup> USF/ICC NPRM, at ¶ 3.

<sup>18</sup> *Id.*, at ¶ 4.

<sup>19</sup> USF/ICC NPRM, at ¶ 104.

<sup>20</sup> Federal Communications Commission, *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, Michael J. Copps, Acting Chairman, May 22, 2009.

<sup>21</sup> USF/ICC NPRM, at ¶ 112.

continue to grow, even though one cannot cite, or even imagine, the future applications that will consume it. In the day of 56 kbps dial-up service less than ten years ago, high-definition video seemed superfluous and applications such as YouTube and Facebook, were not even imagined. Even if one could envision possible future applications; they would seem unrealistic by today's standards and would be easily dismissed. Nevertheless, such applications will become part of everyday life in a few years for business and personal uses, as the above examples have become today. Rather than identifying potential future applications, it is more appropriate to use extrapolations of past growth trends to set target broadband thresholds. A 4/1 Mbps target for 2015 is woefully inadequate. As the Nebraska Companies pointed out in their Engineering Analysis of BAM:

Even if 1 Mbps downstream were presumed adequate currently, using even a low 26% growth rate,<sup>22</sup> it will take only six years [from 2010] for demand to exceed the 4/1 Mbps target. If this plan were adopted, broadband demand would likely exceed the capabilities of 4/1 Mbps networks by the time the rules are finalized, the contracts are awarded, and the networks are built.<sup>23</sup>

## 2.2 The Commission's Broadband Assumptions Inappropriately Enabled Wireless Eligibility

The Nebraska Companies have explained in detail how "The Broadband Availability Gap, OBI Technical Paper No. 1"<sup>24</sup> (OBI No. 1) inappropriately limited broadband usage and growth assumptions in the National Broadband Plan. OBI No. 1 used a meager speed target for rural broadband, even though much higher speeds are already available in urban areas, which would restrict rural residents access to information, as well as limit their access to markets for goods and services; thus making rural residents second-class citizens in this digital age. Indeed, the Nebraska Companies have described in detail how the "...goals [of the Commission's National Broadband Plan] demonstrate the Commission's awareness that Internet speeds much faster than 4/1 Mbps are becoming an essential part of modern life."<sup>25</sup>

---

<sup>22</sup> OBI No. 1, at p. 42.

<sup>23</sup> Engineering Analysis of BAM, at p. 5.

<sup>24</sup> The Broadband Availability Gap, OBI Technical Paper No. 1, Federal Communications Commission, April 2010.

<sup>25</sup> *Id.* at p. 11.

As exposed in the Nebraska Companies' Engineering Analysis of BAM, the OBI No. 1 makes inappropriate assumptions regarding broadband use. The OBI No. 1 argues that a Busy Hour Offered Load (BHOL) of 160 kbps would provide 4 Mbps Downstream and 1 Mbps Upstream (4/1 Mbps) broadband service a reasonable percentage of the time. This assumption was made by eliminating the heaviest 10% of the users and 65% of the traffic from the network. Notwithstanding this inappropriate assumption, a wireless broadband network possibly could deliver this incorrectly low peak usage target, BHOL, if the inherent oversubscription in the wireless access network is ignored.<sup>26</sup> Such oversubscription is not present in wired DSL or FTTP access networks. Further, the assumptions implicit in the OBI No. 1 ignore the changing nature of broadband use, particularly the trend toward constant bit rate (CBR) or "real-time" applications. Real-time traffic, such as teleconferencing, remote medical procedures, VoIP, and video is becoming a larger percentage of the overall Internet traffic, and require networks to be designed with a larger BHOL if acceptable network performance is to be maintained.

CTIA admitted that wireless networks are incapable of measuring an actual speed because of factors such as atmospheric conditions and foliage.<sup>27</sup> In tests conducted across multiple carriers' networks and on multiple devices, CTIA found that transmission speed dropped as much as 97 percent, followed by a 1,200 percent increase in a single three-minute period.<sup>28</sup> According to CTIA, mobile wireless broadband is particularly susceptible to factors that affect speed and these same factors are not present in a wireline network.<sup>29</sup> The Nebraska Companies question how the Commission would intend to ensure compliance with the broadband speed target if wireless providers cannot measure actual speed with any accuracy.

### 2.3 BHOL, Not Peak Broadband Speed, Is the Appropriate Design Criterion

Peak broadband speed is an inappropriate design criterion because it does not apply uniformly to the various access media. For instance, while peak speed increases generally are available to all customers on a FTTP network, peak speed increases in wireless networks are not available to customers at the cell

---

<sup>26</sup> Engineering Analysis of BAM, Section 1.1, at p. 5.

<sup>27</sup> *Connect America Fund, A National Broadband Plan for our Future, Establishing Just and Reasonable Rates for Local Exchange Carriers, High-Cost Universal Service Support, Developing a Unified Inter-carrier Compensation Regime, Federal-State Joint Board on Universal Service, Lifeline and Link-up*, WC Docket No. 10-90, et. al., Comments of CTIA – The Wireless Association, April 18, 2011, p. 31.

<sup>28</sup> *Id.* at p. 33.

<sup>29</sup> *Id.* at p. 34.

edge. Unlike FTTP, higher speeds from more complex modulation or multiple access techniques are only available close to the transmitter, or tower, where the signal-to-noise ratio is large.<sup>30</sup> For example, the utilization of Multiple Input – Multiple Output (MIMO) allows for the concatenation of multiple radio frequencies in order to increase speeds. For increasing speeds, MIMO is only effective close to the cell tower and loses much of its throughput benefits in areas with weaker signal, such as at the cell edge. Thus, unlike FTTP, peak speed increases are not available uniformly to all customers in the service area. More importantly, wireless throughput is limited by its spectral efficiency, so providing higher peak speeds to some users comes at the sacrifice of the throughput available to other users. FTTP does not have these same limitations and can provide almost unlimited capacity to each customer.

Peak broadband speeds do not reflect the extent of oversubscription in the access network. Wireless networks are shared access networks, as multiple users must contend for the cell site's throughput. In addition, the wireless provider may intentionally oversubscribe the network. If the number of customers times the customers' peak broadband speeds exceeds the cell's average throughput, the cell is oversubscribed. For example, 32 users subscribed to 4 Mbps service contending for 16.9 Mbps of average cell capacity (say 10 MHz of downlink spectrum times an average LTE spectral efficiency of 1.69 bps/Hz), results in an oversubscription ratio of  $128 / 16.9$ , or 7.6 to 1. In FTTP networks, on the other hand, every subscriber has dedicated access at the peak speed, which is generally many times higher than an entire 4G cell's shared throughput.

Peak speed is an inappropriate design criterion for broadband, as it is not a fair indication of the actual user's experience. A user's peak broadband speed depends on the type of network that user is on. Unlike FTTP networks, peak broadband speed is not uniform at all locations within a wireless network. Further, peak speed is unrelated to the oversubscription in the network. Wireless networks may have substantial amounts of oversubscription, while wireline access networks are not oversubscribed. High BHOL, rather than high peak speed, is a more appropriate network design criterion, both for wireline and wireless networks, as users and new applications are driving more isochronous traffic.<sup>31</sup> Not only is this traffic more time sensitive, but it also demands large amounts of capacity for extended periods. In this environment, designing for a high BHOL, rather than a high peak speed, is more important. Shared

---

<sup>30</sup> For example, while the ability to improve modulation from 16QAM to 64QAM may be experienced close to the cell tower, where the signal-to-noise ratio required for 64QAM may be available, the signal-to-noise ratio for locations near the cell edge is only sufficient to sustain the lower-order modulation.

<sup>31</sup> Medical imaging, entertainment and educational video, video conferencing, and many new social communication mediums exhibit isochronous traffic patterns.

wireless access networks are ill suited for isochronous traffic, whereas wireline access networks perform well.

### 3 Economic Comparison of Technologies Should Consider Future Demand

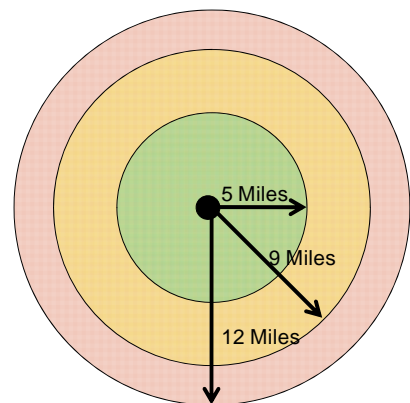
Over the long term, supported broadband networks must meet the growing broadband speed thresholds cost-effectively. The networks deployed today must be easily scalable to meet projected broadband needs of tomorrow without significant additional investment. In their Engineering Analysis of BAM, Vantage Point extrapolated that an anticipated “100 Mbps per household will be required by 2013,”<sup>32</sup> and that “broadband demand could reach 1 Gbps by 2020.”<sup>33</sup> For both wireless and wireline broadband access networks, much of the basic infrastructure has a thirty-year life, or longer. If a service provider were to construct a network that fails to meet customers’ needs for more than a few years, a second network would have to be designed and built before the first network reached the end of its economic life. Thus, the cost to provide broadband would be considerably greater over the long term than if the appropriate network had been built in the first place. In these instances, the network that appears least expensive initially may be more expensive in the end because of necessary upgrades or network replacements. In areas of low-customer density, where the infrastructure cost per customer can be up to ten times greater than in urban areas, it is especially important that the network be easily scalable to meet the customers’ future broadband needs.

#### 3.1 Wireless Network Cost Exceeds that of a FTTP Network as Bandwidth Increases

The following example illustrates the investment required to serve a rural community and its surrounding area. The results show the importance of evaluating a network’s cost-effectiveness over the long-term.

General Assumptions:

- Subscribers:
  - In-town: 1,000 Locations
  - Outside of Town: 1 Location per Sq. Mi.



---

<sup>32</sup> Engineering Analysis of BAM, at p. 16

<sup>33</sup> *Id.*, at p. 12

- Town Boundary-5 Miles: 79 Locations
  - 5-9 Miles: 175 Locations
  - 9-12 Miles: 198 Locations
- 1,452 Subscribers Total
- Greenfield
- BHOL projection @ 26% CAGR, per OBI No. 1

Wireless Assumptions:

- 700 MHz and AWS LTE, concatenation with Rel-10
- Rel-8 / 2x2 MIMO to start, with improvements to 4x2 MIMO and Rel-10 (LTE-Advanced)
- Average Spectral Efficiencies = 3GPP targets for microcells:
  - LTE Rel-8 w/2x2 MIMO = 1.69 bps/Hz
  - LTE Rel-8 w/4x2 MIMO = 1.87 bps/Hz
  - LTE Rel-10 w/4x2 MIMO = 2.60 bps/Hz
- 73% Fixed, 27% Mobile, per OBI No. 1
- One 300 ft. Tower plus six smaller 100 ft. tower sites (needed to meet initial demand)
- After five years: Small, distributed architecture cell technology assumed for cell additions; No additional CPE antennas required beyond this point
- Wireless Backhaul Costs same as FTTP cost per Location

FTTP Assumptions

- Dedicated OSP
- GPON (2.4 Gbps to start, improvements to 10, 40 & 100 Gbps included in scheduled COE replacement costs; 32x splitters)

CapEx Assumptions:

	Cost	Life		Cost	Life
<u>Cell Sites</u>			<u>COE</u>		
Base Station Electronics	\$35,000	5 years	Per Location	\$150	7 years
Initial 300' Twr., Ant. Sys., Anc. Eqpt.	\$185,000	30 years	<u>OSP</u>		
Next (4) 100' Twrs, Ant. Sys., Anc. Eqpt.	\$100,000	30 years	Town (1,000)	\$3,000	30 years
Shared Core Cost	\$10,000	5 years	Rural (452)	\$6,000	30 years
(Macrocells only; req'd for wireless' shared access)			<u>CPE</u>		
Small, D.A. Cell Sup. Str. & Anc. Eqpt.	\$15,000	30 years	All (1,452)	\$350	7 years
Small, D.A. Cell Electronics, Installed	\$20,000	5 years			
(Including share of Baseband Processors)					
<u>CPE</u>					
All (In-Home Xcvrs, Routers)	\$600	5 years			
Ext. Antennas, Installed, 0-5 mi. (1,079)	-	-			
Ext. Antennas, Installed, 5-9 mi. (175)	\$200	10 years			
Ext. Antennas, Installed, 9-12 mi. (198)	\$600	10 years			
(Assumes no new Ext. CPE Antennas with start of Small D.A. Cells)					
<u>Spectrum</u>					
Per MHz-Pop, 2.4 Pop/Loc	\$1	30 years			

When the 20-year cumulative capital costs of these networks are compared, the wireless network appears much less expensive at \$2.3 Million, compared to \$6.4 Million for FTTP. The wireless network will only be supporting a BHOL of 0.178 Mbps, while the FTTP network will have the capability of supporting a BHOL of 70 Mbps. While the wireless network's capital cost is initially 33% that of the FTTP network, it will support only 0.3% of the total subscriber access bandwidth that the FTTP network is providing.

When the costs required to meet subscriber demand are compared over the long term, the importance of total subscriber access bandwidth becomes apparent. The wireless network will require capital upgrades over and above the initial \$2.3 Million to meet subscriber bandwidth projections over 20 years. The FTTP access network, in contrast, will initially support 70 Mbps BHOL for every subscriber. As electronics are upgraded, the FTTP network will support much higher levels of BHOL with no additional capital costs beyond the recurring electronics replacement cost already built into the \$6.4 Million estimate.

While FTTP networks can be cost effectively upgraded to support higher levels of BHOL, wireless networks cannot. The efficiencies of IMT-Advanced technologies<sup>34</sup> are now approaching the Shannon

<sup>34</sup> IMT-Advanced technologies are technologies that go beyond those of IMT-2000, such as LTE-Advanced and WiMAX 802.16m. The International Trade Union defined IMT-Advanced technologies are now using an encoding technique similar to that used for modern DSL technologies. ADSL2+ and VDSL2 DSL technologies use Discrete Multi-tone Transmission, an OFDM encoding technique. IMT-Advanced technologies LTE-Advanced and WiMAX2 also utilize OFDM.

limit,<sup>35</sup> and there are no technologies on the horizon to improve this, nor are there likely to be. Even assuming a rural carrier owns an unrealistic amount of spectrum, 40 MHz (2 x 20 MHz), which would require multiple band allocations besides 700 MHz, the cost of upgrading a wireless network to meet demand quickly approaches that of FTTP within a few years. Without additional spectrum, a wireless provider must reduce the quantity of customers served by each tower in order to increase speed, which increases the cost substantially. In contrast, the 20-year cost of FTTP, however, including the scheduled replacement of electronics, remains relatively unchanged.

The cost of a wireless network far exceeds that of an FTTP network as projected bandwidth demand increases, as illustrated graphically in Figure 1. These findings directly contradict the statements from the OBI Paper, that “[g]iven the current trends, building a future-proof network immediately is likely more expensive than paying for future upgrades.”<sup>36</sup>

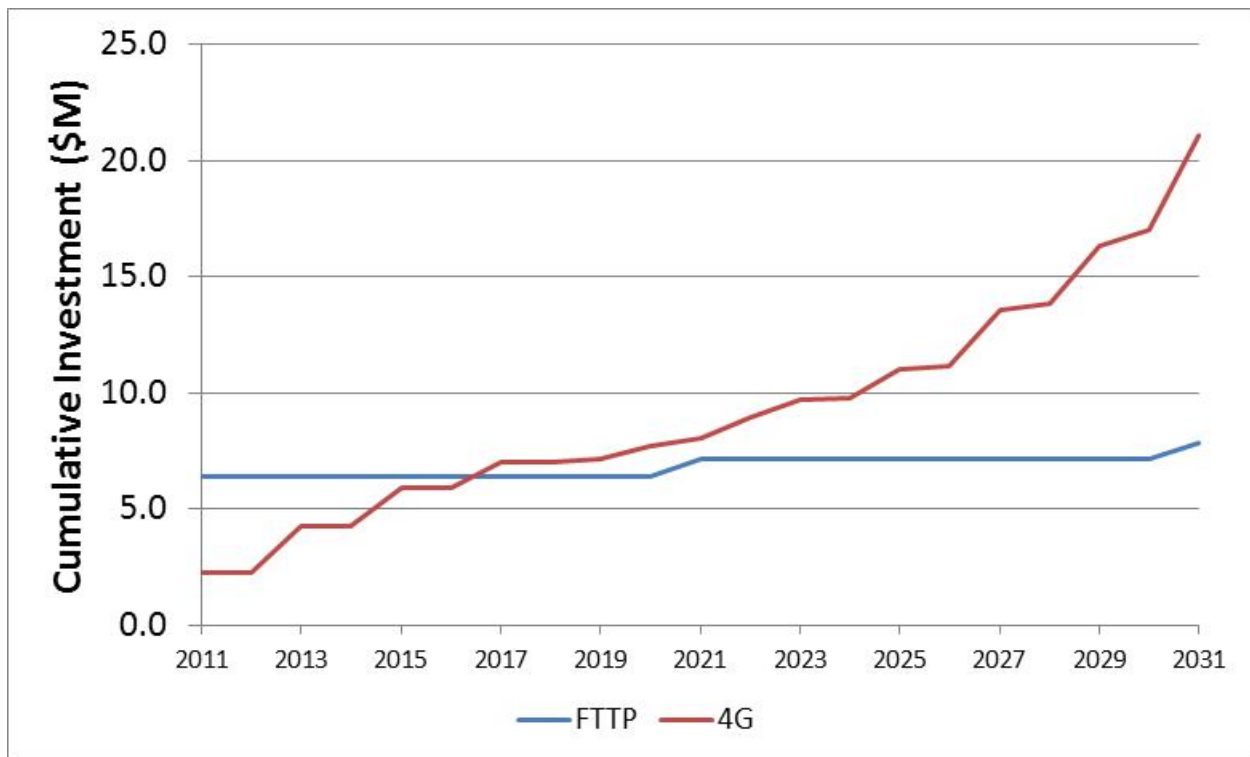
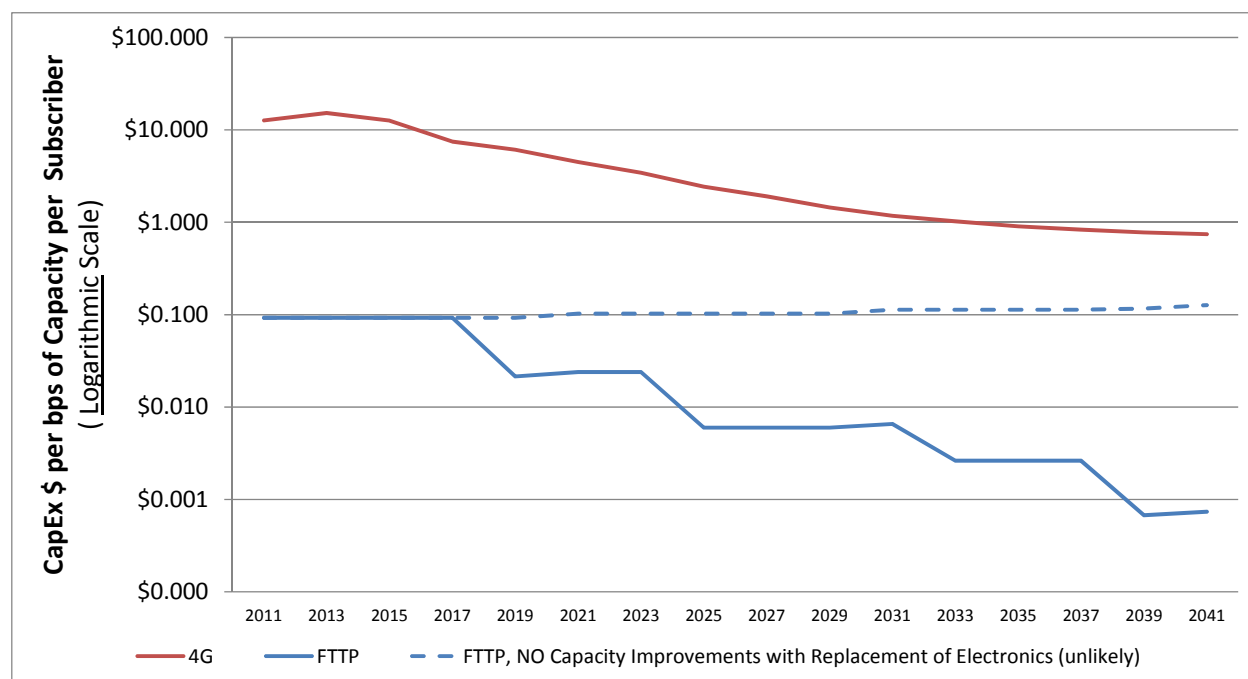


Figure 1 - 20 Year Cumulative Investment Comparison Graph (2 x 20MHz)

<sup>35</sup> The Shannon limit is the theoretical maximum information transfer rate that a communications channel can achieve based on the channel bandwidth and the signal-to-noise ratio of the channel.

<sup>36</sup> OBI No. 1, at p. 41.

When one compares the costs of the access networks against their bandwidth capacities per subscriber, or “dollar efficiency,” wireless networks are much more expensive than FTTP networks, even at low levels of bandwidth, as shown in Figure 2:



**Figure 2 – 20 Year Subscriber Broadband “Dollar Efficiency”**

The difference in the “dollar efficiency” is so dramatic as only to be viewable on a logarithmic scale. A FTTP network can deliver powers of ten more bandwidth at a fraction of the cost of a wireless network. While wireless spectral efficiency is nearing exhaustion, once FTTP is deployed, the bandwidth improvements are substantial, even if no technology enhancements accompanied the scheduled electronics replacements, which is highly unlikely.

### 3.2 Sensitivity Analysis of Assumptions Does Not Cause Wireless to Be More Cost Effective

The timing of the cumulative investment crossover point between wireless and wireline technologies may be delayed somewhat by assuming a slower traffic growth rate, lower wireless CPE cost or longer electronics life. Nevertheless, this high-level model remains highly conservative, due to several costly factors. First, the higher operating cost of wireless technology has not been considered. Second, using the rough BHOL/peak speed relationship suggested by OBI No. 1,<sup>37</sup> or even a much higher rate,<sup>38</sup> the

<sup>37</sup> 160 kbps BHOL relates to a 4 Mbps peak broadband speed offering.

assumed BHOLs amount to peak speeds that are powers of ten less than the “100 Mbps [peak] per household by 2013” and “1 Gbps [peak] by 2020” estimates supported above.

Wireless proponents are quick to claim that wireless network costs could be dramatically reduced with the infusion of profuse amounts of spectrum. Assuming the following:

- an inexhaustible supply of spectrum;<sup>39</sup>
- no additional cell sites besides the first twelve;
- no CPE replacements beyond those scheduled to accommodate multi-band channel additions;
- future devices can operate on all of the non-contiguous spectrum bands at once; and
- CPE has sufficient chipsets to cover all assumed frequency bands in a single device.

At the end of 20 years, the model shows that the cost of a wireless network still far exceeds that of FTTP, as shown in Figure 3.

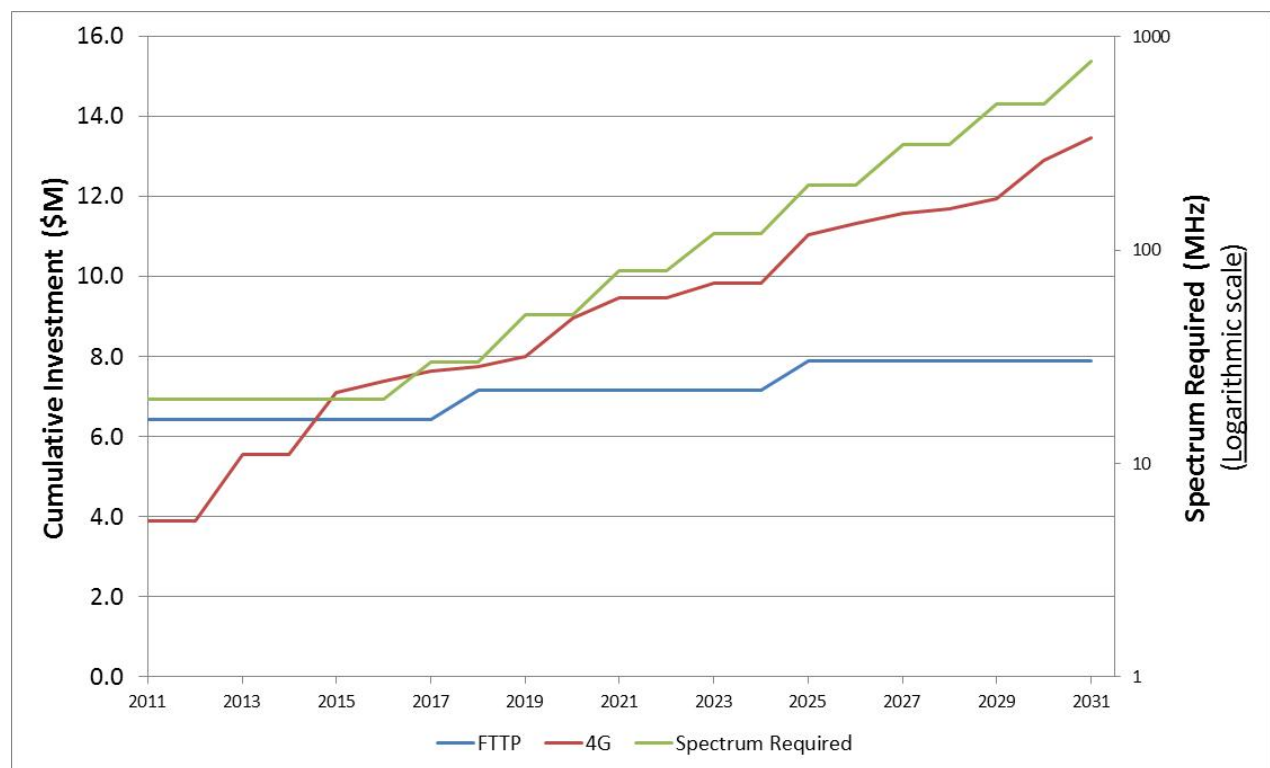


Figure 3 - 20 Year Cumulative Investment Comparison Graph (Unlimited Spectrum)

<sup>38</sup> A higher BHOL/peak broadband speed would require the assumption of substantial wireless oversubscription.

<sup>39</sup> Far more spectrum than is currently available or is projected to become available for broadband services was assumed.

Regardless of the spectrum one could realistically amass or the number of cell sites one could inexpensively deploy, the long-term cost of a wireless network inevitably and inexorably exceeds that of FTTP. Thus, it would make no sense to fund a wireless network for fixed broadband delivery when a FTTP network, which can carry powers of ten more bandwidth to each subscriber, can be constructed for the same or even lower long-term cost. If an inappropriate short-term wireless solution were deployed, only to be replaced when demand exceeds the network's capacity, the cost of both networks must be recovered, thus making the overall cost even higher. Since rural network replacement costs per subscriber are so high compared to that of urban deployments, it becomes even more crucial that the initial infrastructure deployed be easily upgradable to meet customers' rapidly increasing broadband needs. While it is tempting to compare only on the initial investment, which effectively is what the Commission proposes for the Near-Term CAF, the conclusion of the Nebraska Companies in their Engineering Analysis of BAM still holds: "Constructing networks with such a short useful life would be shortsighted, costly and an inefficient use of scarce USF resources."<sup>40</sup>

## 4 Conclusions

The Nebraska Companies agree that broadband should be classified without regard to the delivery platform; however, appropriate criteria must be specified to properly evaluate network capabilities. From a design standpoint, the network's BHOL is more important than the peak speed threshold, as peak speed is not a fair indication of the actual user's experience. The peak speed of a customer on a wireless network depends on the customer's location relative to the tower, whereas a wireline customer's peak speed is unaffected by location. In addition, peak speeds do not reflect the extent of oversubscription implicit in a wireless network, but not present in wireline networks. When comparing the cost-effectiveness of networks, both the network's ability to serve the anticipated broadband demand growth, as well as the long-term cost of the proposed network must be considered.

When these requisite criteria are considered, wireless networks are unsatisfactory long-term solutions for rural broadband delivery. Wireless networks will require either a large number of cell sites (as many as one cell site per location) or an unreasonable amount of spectrum. Even if these infeasible assumptions were possible, the long-term cost of wireless will far exceed that of FTTP. The Nebraska Companies have shown that dependence upon a wireless access network to meet the projected broadband demand in rural applications will require continual and expensive network upgrades. The

---

<sup>40</sup> Engineering Analysis of BAM, at p. 6.

situation is made more tenuous because the necessary wireless upgrades – even in the near term –rely upon “bleeding edge” technologies that are, as of yet, experimental or conceptual. Funding such a wireless network, even for the short term, would remove support from the network required to meet future needs. It would be senseless to fund both networks when FTTP has the capability to support anticipated broadband demand *today*. As observed by Professor Nicholas Negroponte at MIT’s Media Lab, the famous “Negroponte Switch” has now come to pass:

As more mobile devices need connections to the data network, and bandwidths required and deliverable in wired or fibre-optic systems grow, it becomes steadily less sensible to use wireless broadcast as a way of communicating with static installations. At some point the switch takes place, as the limited radio bandwidth is reallocated to data service to mobile equipment, and television and other media move to [wired or fibre-optic systems].<sup>41</sup>

There is no reason to expect that “switching back” is a sensible long-term solution, even for rural America.

---

<sup>41</sup> [http://en.wikipedia.org/wiki/Negroponte\\_switch](http://en.wikipedia.org/wiki/Negroponte_switch)